# ‘TIME TO CONNECT’

An investigation into the relationship between time and student connectedness

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Figure 1:

Each starling chooses its direction based on six or seven neighbours. (BBC NEWS, 2016) citing (Pearse and Turner, 2014).

*As young people in the transition to adulthood we have in our higher education system tens of thousands of emerging adults preoccupied with many of the tasks that society is happy for them to be engaged with - what will I study, how will I emerge from this as a teacher, lawyer etc. But the central and personal concern is this: who is my friend? Who am I now in this new environment? And who is going to be my ally in the new learning and development trajectory? If the student finds it difficult to negotiate a satisfactory answer to these questions it will be a dominating preoccupation. I suggest that if we ignore the centrality of this concern we will miss what is central to young people’s concerns and what is key to their success. (Fleming, T. 2011, pp. 5-6)*

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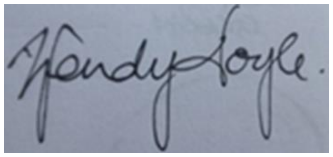
*Signed:* 

*Dated: 06/05/2016*

# ABSTRACT

There are many themes effecting entry-level student progression. Connectedness is one such theme, suggesting the more socially integrated into College life the student is, the greater the likelihood of the student progressing. Despite many strategies and interventions designed to retain the entry-level student, non- progression remains high. Researchers suggest this is partly because these interventions stop short of the classroom.

This Action research is the start of a real time investigation into the relationship between time constraints and student connectedness and seeks to gain a deeper understanding of how and why students connect to each other in a first year design studio classroom. The action took place during a design studio project while the students worked in groups; various time constraints were applied as they worked together to bring a task to completion.

The aim of this action research project is to produce real knowledge that is practical and can be used by people in everyday contexts.

The research found that students experienced connection to the task when operating in teams under a time constraint and that a time constraint may be a variable in students connecting to each other but warrants further investigation.

A further iteration of the cycle, attempted to create a ‘safe emergency’ where students, without tutoring had to bring a task to completion under a time constraint. During this ‘action’ the students perceived they connected to each other and the task.

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# INTRODUCTION

A broad body of literature focuses on the affecting factors the student brings to the college experience and how these impact on the student's progression through their first year.

One such factor is connectedness; being defined as the subjective feeling of belonging mediated through the structural conduits of social integration. The more socially integrated into college life the student is the greater the likelihood of the student progressing. Connectedness happens at the point of transition between the student's world and the new world of college. The student brings a myriad of affecting themes with them through the College gates but as they cross that threshold the only affecting factor that has yet to influence the student is their connection to the college community. Those within the college community form the web of connection, staff and students alike. One of the busiest junctions of this web of connectivity is in the classroom.

Despite much research and many interventions achieving some success entry-level-student non-progression remains high. Researchers suggest this is partly because most interventions stop short of the classroom.

This action research project attempts to produce real knowledge that is practical and can be used by people in everyday contexts; such as the classroom.

This research is the start of a real time investigation into the relationship between time constraints and student connectedness, and seeks to gain a deeper understanding of how and why students connect to each other in a first year design studio classroom. The action took place during a design studio project; while the students worked in groups various time constraints were applied as they brought a task to completion.

The research found that students perceived a connection to the task when operating in teams under a time constraint and that a time constraint may be one variable in connecting to each other but warrants further investigation.

The research also found that a number of variables may influence student connectedness during team one such variable may be common purpose.

A further cycle in the action research project found when the students worked in teams under a time constraint towards a common purpose without the teachers present, the students perceived they connected to each other and to the task.

## Why study entry-level student progression?

The rationale for the study of entry-level student non-progression within higher education is to identify the main themes associated with student non-progression and to develop strategies to facilitate in the social and academic development of the student and so aid the student's progression. (Tinto, 1975)

Entry-level student non-progression threatens not only the success of the non-progressing student but also the academic institution and the society and economy in the student operates.

Scholars propose that third-level education is subject to the effects of a paradigm shift from an industrial to a knowledge based economy. Attaining a third level education presents the graduate with more and better paid employment opportunities. (OECD, 2014)

The European Commission (2001) in identifying the objectives: personal fulfilment, active citizenship, social inclusion and employability/adaptability in the promotion of lifelong learning suggest our role as educators extends to the development of the student as an included, contributing and valued member of society.

There are broad social, economic and societal benefits to retaining more students and great personal benefits to the students themselves. There are also financial benefits to the educational institution when more students are retained.

## Why am I studying entry-level student progression?

Entry-level student progression is important for the student and society as a whole. Our role as educators is more than simply transmitting information; it extends to the development of the student as an included, contributing and valued member of society the classroom.

In art and design education we, as teachers have the luxury of one to one interaction with each student. This interaction leads to an understanding of the student and makes it easier to tailor an invisible curriculum which runs in parallel to and supports their academic learning process. I have had many such teachers who have been instrumental both supporting my transitions and in informing my values.

## Relevance to practice

As head of first year in the Design Faculty in Griffith College it is part of my job to facilitate the student in progressing through their first year of college. I encourage the development of an attitude to learning, that doesn't just happen in the physical space of the classroom or the

delivery of course content but through the conduits of communication and interaction. The careful placement of team in the first semester of year one is designed to support student interaction by creating a shared learning space.

## Background

Many educational bodies have identified the difficulties entry-level students have transitioning between second-level and third-level education. This difficulty becomes apparent in the first year of College. The HEA has identified Art and Design courses as having higher entry-level student progression than average (2010). Research has identified some key factors associated with entry-level student non-progression and they are as follows: prior educational attainment, wrong choice of course, financial, living arrangements, socioeconomic, first generation students and feeling connected.

Report (No. 4) by the National Forum for the Enhancement of Teaching and Learning in Higher Education (2015, p.2) identifies five themes central to student non-completion including and these include course, personal, financial, medical/health, family and wrong choice of course. The report further states that students said the medical issues they experienced were predominantly mental health issues and general feelings of disconnectedness.

Report (No. 6) published by the National Forum for the Enhancement of Teaching and Learning (2015) examining the students' experiences of the transition to higher education in Ireland points to "time management skills and social challenges as amongst the most challenging aspects of transition (p. 79)".

Students not feeling 'connected' to others within the college environment has a significant impact on the student's decision to leave college (Flemming, 2011).

The human need for connection is well established in psychology. Connectedness happens both subjectively and structurally when the individual feels a sense of closeness to others within the wider social realm of which they are a contributing and valued member. Strong bonds are created between individuals through frequent and positive interactions. Through these interactions the individual transitions into larger organisations such as families, tribes, communities and humanity as a whole (Whitlock, 2010).

Connecting to the learning environment and those within this environment involves the co-construction of a learning space, both social and educational (Tinto, 1975). This shared learning space serves "….as the foundation for knowledge creation" (Nonaka and Konno, 1998, p.40).

Tinto (1993) argues that the goal of retention efforts is not primarily to keep the student on campus but the social and intellectual education of the student. And it is the combined and interactive effects of the students social and educational experience that influence whether or not they decide to stay.

## What is the problem?

However, creating this supportive and inclusive learning environment requires an understanding of the many factors that converge in its creation. The discourse around connectedness mostly sees disconnection as a student issue beyond the influence of those within the academic institution (O'Rawe, 2015, p.178).

Despite much research and many successful interventions, entry-level student non-progression remains high. Tinto (2012) suggests this is because most "innovations" (p.4) have not substantially improved the classroom experience.

Uniquely, this research seeks to gain a deeper understanding of how and why students connect to each other in a design studio classroom.

## What is the purpose of this research?

**PURPOSE:** The purpose of this research is to gain a deeper understanding of how and why students connect to each other during team exercises in a design studio classroom.

**QUESTION:** How can I change teamwork exercises to gain a deeper understanding of how and why students make connections to each other during these exercises?

**QUESTION:** If I ask those invested in the progression of entry-level students in the design faculty to reflect on their experience of student connectedness in the classroom how will this inform the plan for the first action step in this AR project?

## What is the context of this research?

This educational research took place in the design faculty in Griffith College Dublin. The research happened in a first year design studio classroom. The research drew on the views of all invested (Faculty, teacher, student) in the progression of entry-level students. The

student group, 23 strong are a microcosm of the world with many nationalities represented, their similarity is that they are mostly between the ages of 18 and 22 (see appendix A).

There were three tutors in the studio class, myself, tutor G and tutor M. We as tutors bring a mix of creativity, technical expertise and industry experience to the classroom.

From inside, the studio classroom door opens to the view of the year head office door, to the left of this door is the administrator's office and to the right is the faculty head's office. The corridor is the artery of the design faculty where several informal conversations took place about the research as it evolved.

There were various encounters with colleagues from other faculties about their experiences of student progression, doing a master's thesis, research methods, student connectedness and classroom strategies. These encounters would happen while in transit from one place to another or while hanging between the doors.

There were two dissertation writers in the year head office, when we were in on bank holidays and weekends we humorously referred to our space as "dissertation prison".

The research started in November 2015 with my reflection on two sequential team projects. The first project required the students to construct a cardboard chair, real scale, anthropometrically and ergonomically sound. The second project entailed the construction of a cardboard coffee kiosk similar in requirements to the chair project.

## How was this research conducted?

This research was conducted through action research. The aim of the research is to produce real knowledge that is practical and can be used by people in everyday contexts. The research seeks to understand the problem of connectedness form the views of all affected by it and so co-constructs an understanding of the problem with all involved informing the change.

This research uses the action research model devised and objectified by Kemmis and Mc Taggart shown below where every time the 'action, reflect, plan' cycle is used it further refines the methods, data and interpretation through the understanding gained in the previous cycle (1988). Fig 1.


Figure 2.

The action research spiral Kemmis and Mc Taggart 1998 (Slideshare.net, 2010)

The data was collected using various instruments as follows: My reflective journal, Informal discussion with faculty members and students, a faculty focus group, a student reflective piece and student surveys conducted directly after the action steps of the cycle.

# LITERATURE REVIEW - CONNECTEDNESS

Initially this chapter asks what is the discourse around entry-level student non-progression? Subsequently, through the literature, connectedness is defined and investigated as to where, why and how it connectedness happens. Then the chapter reviews the discourse on connectedness as a theme affecting entry-level student progression. Finally, the chapter looks at connectedness in the classroom as definitive of classroom community and identifies the main elements of community.

## What is the discourse around entry-level student non-progression?

Many educational bodies have identified the difficulties entry-level students have transitioning between second-level and third-level education (HEA 2010, HEA (UK), TCD, UCD, DIT, and CIT). with the HEA (2010) estimating as many as 27%-28% of entry-level students do not progress to their second year.

Student progression rates vary across levels and sectors. Student progression from second year to third year is estimated to be between 4% and 16% (HEA 2010). Entry-Level progression rates vary across sectors with computer studies having the highest non-progression rate at 28% (HEA 2010) and medicine having the lowest non-progression rate at 2% (HEA 2010). The HEA has identified Art and Design students as having higher entry-level student progression than average (2010).

The research suggests there are many reasons why entry-level students don't progress and that it is a complex and varied issue (national forum 2015, DIT 2015). However, educational bodies (UCD, TCD, DIT, CIT, and HEA 2010) have identified some key factors associated with entry-level student non-progression and suggest the more of these factors affecting the student the lower the likelihood of that student progressing (Yorke & Longdon 2008). Some of the key factors affecting student progression are as follows: Prior educational attainment, wrong choice of course, financial, living arrangements, socioeconomic, first generation college students and feeling connected.

Focused research report (no. 4) by the National Forum for the Enhancement of Teaching and Learning in Higher Education (2015, p.2) identifies "…. five core themes which are significant in terms of student non-completion including: course, personal, financial, medical/health and family." The report states when siting medical and health issues that students specifically indicated mental health issues and general feelings of disconnectedness.

Focused research report (no. 6) by the National Forum for the Enhancement of Teaching and learning in Higher Education examining students' experiences of the transition to higher education in Ireland points to time management skills, personal responsibility, financial and social challenges amongst the most challenging aspects of transition. The students said: "time management skills and social challenges as amongst the most challenging aspects of transition (p. 79)".

Figure 3:

The artist and physist (Csörgő, 2002-2005) captures the essence of connectedness. (Immablog.org, 2016)

## What is Connectedness?

Students experience connection to third level education in various ways. Connection is felt by the student through the network channels embedded in campus life, the chosen faculty and its members and fellow students. This research attempts to gain a deeper understanding of how and why students make connections to each other within the context of a first year design studio classroom.

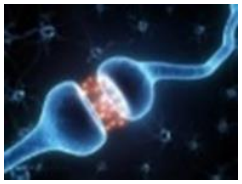


Figure: 4 (Youcubed at Stanford University, 2016)

Figure: 5 (Jon Lieff, M.D., 2012)

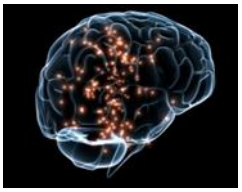


Figure: 6 (Futurism, 2015)

Figure: 3 (Csörgő, 2002-2005)

Figure: 7

Fig: 8 (Adams, 2012)

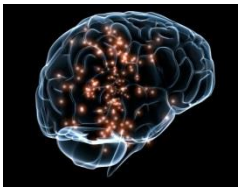
Connectedness has been described as the human want for mutual affection, as the need to see and be seen in a positive light being described as a sense of belonging generated through social interaction with other individuals and groups (Whittacker, 2008, p.1).It has been communicated as the drive to relate expressed at the intersection of the individual and the collective (McNealy et al., 2009) where the desire to belong to a community wider than the self is definitive of an interdependent mode of being (Kitayama and Cohen, 2010).

Whitlock puts forward the below definition of connectedness:

a) *A psychological state of being, a sense of closeness, embeddedness, and visibility to others in a way that invites or accepts authenticity*
b) *As a property of a relationship system through which perceptions are generated and norms are generated.} (2010, p.7)*

Connectedness is a subjective feeling of belonging mediated through the structural conduits of human interaction. Energy flows bi-directionally through this network where the connected individual is both influential and influenced. (Mc Millan and Chavis, 1986)

## Subjective connectedness


Connectedness happens subjectively as a sense of closeness to others within the wider social realm, characterised by feelings such as caring, belonging, trust, value and respect. (Whitlock, 2014). The need to connect with others is well established in the field of psychology (Rhetti, 2003, p.2) and is associated with terms including attachment, bonding, engagement, belonging and community.

Maslow's 'hierarchy of needs' (1968) ranks 'love and belongingness' as the middle stage to be attained before esteem and self-actualisation can be realised. The neuroscientist Cozolino (2014) argues that 'love and belongingness' should be the primary need on Maslow's pyramid as it is the connection forged between mother and infant in the opening moments of life that dictates whether or not the infants needs will be met. It is the most basic human need.

Bowlby (1969) and Bandura (1969) theorise that a person's capacity to connect with others is grounded in them having developed the ability to make secure attachments in childhood. They advocate the importance of these attachments as shaping the kind of attachments formed throughout their adult lives.

In Harris's (2011) work "The Nurture Assumption" a frank critique of attachment theory she states that socialisation and personality develop separately. Socialisation adapts children to their culture and personality development serves to maintain individual distinction and therefore "The experts are wrong, parental nurturing is not what determines how a child turns out. Children are not socialised by their parents, the nurture assumption is a myth and most of the research used to support it is worthless" (p. xv introduction) Harris (2011) suggests children are more socially influenced by their peers than their parents, a view supported by Piaget (1936) and disputed by Vygotsky (1934).

Up until recently scientists believed that connections within the brain developed in childhood are set and act as script for life. Now the brain is considered to be an ever changing learning organ capable of an enormous capacity for change throughout life (Dweck, 2012, Blakemore, 2012).

Cohen and Wills' (1985) social support theory emphasises the role of social connections in influencing wellbeing and suggests that individuals with a greater number of members in their social support structure have access to the psychological and material benefits of their social group and are more likely to be in better health.

Not everyone has a need to build many connections; some people have a lower need to belong and so will be satisfied with a smaller number of connections. However, if an individual does not fulfil their connectedness need this may lead to feelings of isolation. (Whitlock, 2014).

## Structural connectedness

Structural connectedness refers to the network of interconnected relationships within a group. Connectedness within the structural domain includes elements such as the sharing of resources, network density and strength of social ties (Whitlock, 2014). These networks are embedded with resources that can be accessed and used by the individual acting as part of the network. Scholars refer to the resources embedded in the communal grid as ‘social capital’ (Bourdieu, 1986). Basic elements of social networks have significant outcomes for individuals and equally individuals influence the structure and evolution of the networks. Being connected within a large social network may mean increased exposure to more diverse information. Social networks vary in their cohesiveness and individuals differ in their connectivity.

The unit of ‘connection’ when replicated through more than one relationship becomes a network of ‘connection’. It is this network of connections that forms the group, community or organisation through which social forces are activated

## Connectedness and culture

The social forces active in groups or organisations differ in terms of values, behaviours and accepted norms or boundaries. These accepted norms are the organisation culture and are negotiated by the individuals within the organisation.

These accepted cultural norms are expressed in the vision and mission of the organisation. A cohesive organisational culture is said to be one where members of the organisation are aligned with organisational values, behaviours and accepted norms or boundaries (O'Donnell and Boyle, 2003).

In 2010 Google threatened to pull out of China due to the country's growing censorship within the operation of its search engine as this was out of alignment with Google's "do no evil" working ethos. "This has become a war of ideas between the American company moralising about internet censorship and the Chinese government having its own views on the matter." (Nytimes.com, 2016) citing Emily Parker a senior partner at the centre on US China relations at the Asia society.

Individuals usually inhabit one or more socially connected groups and this membership is facilitated through various binding commonalities (McMillan and Chavers,1986), nationality is probably one of the most defining commonalities.

From a social and psychological perspective nationalities are usually divided into the two categories of individualistic and collectivist (Triandis et.al, 1998, p.323.). Individualist societies subjugate the needs of the group to individual achievement prioritising competition and independence. Individualistic societies include many western cultures such as the US, Ireland and certain European countries. Collectivist societies subdue the needs of the individual to the needs of the family or group. Collectivist societies include many eastern cultures such as: Japan, China and Korea (Kitayama and Cohen, 2010).

## Connectivism – an advancing theory

With technology driving global interconnectedness, we need to be aware of cultural diversity and differing patterns of cultural thinking. George Siemens' (2005) advancing theory of 'connectivism' describes an interconnectivity that is driving change in many aspects of how

we interact and how we learn. He proposes connectivism as a learning theory for the digital age. In this seminal paper he proposes that technology is 'rewiring our brains' and as such what, how and where we learn. He talks about the exponential growth of knowledge and the finite life span of this knowledge.

"A network can simply be defined as connections between entities. Computer networks, power grids, and social networks all function on the simple principle that people, groups, systems, nodes entities can be connected to create an integrated whole. Alterations within the network have ripple effects on the whole." (Siemens, 2005, p.4)

## Why does connectedness happen?

Connectedness happens both structurally and subjectively through social interaction (Nonnaka and Konno,1998, Seimens, 2010). Louis Cozolino (2014) explains the idea of "social synapse" which he defines as "the space between us…filled with seen and unseen messages and the medium through which we are combined into larger organisations such as families, tribes and society, and the human species as a whole (p.61)."

The human species evolved through the desire to interact, understand and respond through the use of "increasingly complex social cues" (Cacioppo and Patrick, 2008 p. 11) that powered the development of complexity within the cortical mantle of the human brain. The ability to use various methods of communication such as language developed through the need to communicate our realities to each other in ever more specific terms.

The sense of social connection ingrained into our development and behaviour influences the regulation of our physical and emotional stability (Cacioppo and Patrick, 2008). It is the individual's perception of social connection that influences their health and well-being for better or worse.  An ever increasing body of research points to the interplay between perceptions of social experiences, neurobiology and emotion. (Whitlock, 2014).

The cognitive and emotional responses these social interactions generate need to be positive and frequent to build a lasting effect. (Baumeister and Leary, 1991, Joiner, 2006, Mc Millan and Chavis,1986, Nonnaka and Konno, 1998)

Social connection is such an integral part of what we are, it is no surprise that violations of accepted social orders are traditionally penalised through the deprivation of social connection, such as imprisonment or the ultimate form of punishment, solitary confinement. Another practice of reward and punishment within a community is the public

honouring/humiliation of an individual which will have an impact on the member's sense of belonging and their attractiveness to other group members as such defining accepted group behaviour (McMillan and Chavis, 1986).

Connectedness happens through our need to understand and be understood by others. We evolved through our need for connection. We are hard wired to fulfil this need intellectually, emotionally and physically.

## How does connectedness happen?

The parasympathetic nervous system reacts physically to social interactions. This response is felt in the vagal nerve originating in the brain stem and meandering through the human body connecting to most major organs. The relationship between the brain and the viscera reciprocates through the vagal nerve. Scientists theorise a link between vagal nerve function and health and wellbeing. An upward spiral dynamic of vagal tone continually reinforces the tie between positive emotions and physical health; this spiral is mediated by an individual's perception of their social interactions (Park, 2014, Porges, 1994, Fredrickson, 2001, Kok et al., 2013).

According to (Hendal-Griller et al., 2010) Neuroscientific research points to the importance of emotion in learning and suggests that emotion and cognition are intertwined in the brain and most of our mental functioning is determined by both as such emotion has an important function in learning. "The existence of neural wiring between the thinking and emotional centres of the brain suggest that emotions can either enhance or inhibit the brains ability to learn." (p. 9). Cozolino and Sprokay (2006) suggest the optimum emotional condition for learning is a 'high state of attention…. without the debilitating anxiety" (p.9). They refer to this state of attention as a "safe emergency" (p.9).

This human desire to interact propelling evolution through learning from each other suggests the importance of sensitivity to "the emotional climates we create during learning experiences" (p.9) as well as the emotional sensitivities of learners both with respect to their personal lives and how they operate within a learning context.

In a recent article published by (Duhigg, 2016) entitled 'What Google learned from its quest to build the perfect team' examining Julia Rozovsky's research into team dynamics. In 2012 Google launched 'Project Aristotle' in an attempt to understand why some teams worked well together and why others didn't. What they found was that regardless of how they arranged the data they couldn't find patterns. The looked at the data from a different perspective and

recognised that successful teams were emotionally responsive and respectful towards each other. The report cites Harvard professor Amy Edmondson's (1999) theory of 'psychological safety' as the underpinning dynamic of an effective team. "It describes a team climate characterised by interpersonal trust and mutual respect in which people are comfortable being themselves."

Being accepted for who we are within a group allows for error without judgement as part of the knowledge generating process. If group members can be authentic knowing their contribution is valued and their voice is heard a genuine connection to the group is made. It is within this shared space that knowledge is generated. Conversely feelings of isolation within a group can impair our ability to speak up or engage well with other team members and so the group task.

"The roots of our human impulse for social connection run so deep that feeling isolated can undermine our ability to think clearly, an effect that has a certain poetic justice to it, given the role of social connection in shaping our intelligence." (Cacioppo and Patrick, 2008, p. 11.)

## Where does connectedness happen?

Allusions to this energy filled space where we connect and co-construct knowledge are found in many fields including psychology, philosophy, physiology, social science, science and art. It is abstract, elusive and difficult to define.

"I define connection as the energy that exists between people when they are seen, heard and valued; when they can give and receive without judgement and when they derive sustenance and strength from the relationship." (Brown, 2010)

Vygotsky (1934) puts forward the theory that cognitive development grows from social interaction within the zone of proximal development as individual's co-construct knowledge.

The concept of '*ba*' translating roughly from Japanese to English as 'place' was originally theorised by Nishida and progressed by Shimizu. Ba is defined as "A shared space for emerging relationships…" "…serving as the foundation for knowledge creation" (Nonaka and Konno, 1998, p.40). The Japanese concept of 'ba' conceptualises an abstract place where self-transcendence and acceptance of the group as one through sharing various kinds of knowledge creates new knowledge. Knowledge rooted in *'ba'* and is gained though experience and reflection on the experiences and reflections of the self and others. This new

knowledge is generated and evolves through the spiralling dance of explicit and tacit knowledge.

Socialisation involves the sharing of tacit knowledge between individuals. This refers to Nishida's (cite) concept of pure experience where tacit knowledge is shared through engaging with others. Explicit knowledge has to be embodied in action and practice thus the process of internalising explicit knowledge "actualises concepts or methods about strategy, tactics, innovation or improvement". "In practice, socialisation involves capturing knowledge through physical proximity" (Nonaka and Konno, 1998).

Rovai (2002) points to student dropout rates being higher in online courses and theorises this may be because of the physical separation of students in these courses suggesting this physical dislocation may have a negative impact on the development of connection. He cites (Kerka,1996, Besser and Donoghue, 1996, and Twigg, 1997) as supporting his hypothesis.

Originating 'ba' which is the primary 'ba' from which the knowledge creation process begins and represents the socialisation phase. Physical, face to face experiences are the key to conversion and transfer of tacit knowledge. Pure experiences, or 'being thrown into the world' (Heidegger, 1996) are philosophical terms to describe this.

## LITERATURE REVIEW – CONNECTENESS AND ENTRY-LEVEL STUDENT NON-PROGRESSION

"The point of retention effort is not merely that individuals be kept in college. Education is the social and intellectual development of individuals rather than just their continued presence on campus and this should be the goal of retention efforts" (Tinto 1993 p.6).

College is not just about fulfilling academic demands it also opens new avenues for the student to explore her/himself as a social being. Roberts and Styron (2007) underline the importance of social integration and connection as an important factor affecting student persistence. Lizzio (2006) argues that a student's persistence in college depends on his sense of connectedness. Where entry-level students are concerned there is a "need to view social interaction as a key aspect of engagement" (O'Rawe, 2015 p.180).

A large body of educators and researchers concur that fulfilment of connectedness need is one of the most pivotal needs to be achieved for students to perform well in most kinds of learning environment (Tinto, 1993, O'Rawe, 2015, Flemming, 2011). The student's sense of

connectedness to their peers, colleagues, faculty members and affiliation with the university as a whole plays a part in promoting their academic success.

Tinto (1993) suggests it is the combined and interactive effects of the social and academic experience that influence the student's decision to stay in college.

Integration with the college experience is crucial to the student having access to the resources for success in reaching their academic and social goals. The student embarks on third-level education with various characteristics and abilities that will have an impact on their initial connection to the intellectual and social communities of the institution. Much of the literature bases the rationale for entry-level student progression on what the student already brings to the college experience. Tinto (1993) suggests most departures from college are the student's subjective feeling of "not belonging or not being involved with the institutional community" (p.6).

Tinto's 1993 theory suggests that student commitment is related to their perception of the quality and quantity of their experiences, both social and academic.

Positive and frequent interactions are fundamental to student integration into the college community and thus psychological (Whitlock, 2014), physical (Park, 2014, Porges,1994, Fredrickson, 2013, Kok et al.) emotional (Brown, 20xx, McMillan and Chavis,1986), social (Cacioppo and Patrick, 2008) and intellectual (Nonnaka and Konno, 1998) well-being. (Tinto, 1993, Baumeister and Leary, 1991)

Tinto (1993) argues that although student's precollege life brings to bear on their third-level experience that the institution shares a responsibility in assisting the student reach these academic and social goals. Much of the literature on the subject of connectedness sees student disengagement as being a student issue and "lying outside" (O'Rawe, 2015, p.178) the control of academic researchers and staff.

## Connectedness and the academic institution

Connectedness is necessary for the social constructivist approach to education. Scholars suggest knowledge is realised in two ways, knowledge transmission and knowledge construction.

Educational institutions have historically supported the 'transmission' of knowledge being delivered to the student in more or less in its intact original state. The co-building of knowing favoured by the constructivist approach involves all engaged in the knowledge transaction

and assists in the creation of new knowing. (cite) O'Rawe (2015) citing Seimens (2005) suggests that although "somewhat trite" (p.182), the need to shift the learning culture in the classroom by viewing the teacher as guiding rather than controlling the classroom.

Transmission serves to replicate knowledge dictated by the dominant culture so those students aligned with the dominant culture have a greater chance of success. (Bourdieu and Passeron, 1990) However success and failure in the educational system has been seen as due to individual gifts, or lack of them (Sullivan, 2002).

## Connectedness and the student

Each student comes to third-level education with a unique life space that affects their college experience. There are however two characteristics of entry-level students that are important within the current educational climate considering the increase of international students and the age of entry-level students.

## Connectedness and international students

There is significant research into the need for international students to make connections to the third-level educational environment. International students who have forged friendships with host country individuals generally feel more satisfied and socially connected (Hendrickson et. Al, 2010). Hendrickson goes on to suggest that there is a correlation between being socially connected to host country friends, general satisfaction, well-being and decreased homesickness and suggest that friendships with people from the host country are more important to the adjustment process for international students. Through interaction with individuals from the host country, international students develop better language and communication skills, and an enhanced understanding of the cultural norms of the host country.  This works both ways as Hendrickson (2010) citing (Yum, 2001) suggest having many international friends is linked to "increased complexity of an individual's cognitive map.

## Connectedness and emerging adulthood

> *I would there were no age between sixteen and*
> *Three and twenty, or that youth would sleep out the*
> *Rest, for there is nothing in between but*
> *Getting wenches with child, wronging the aincentry*

*Stealing, fighting – Hark you now, would any but*
*These boiled brains of nineteen and two and twenty*
*Hunt this weather* (Shakespeare's A Winter's Tale)

Arnett puts forward the theory of a band of development between the ages of 18 and 25 calling it emerging adulthood, suggesting this is an extension of the accepted band of adolescence estimated by the World Health Organisation (2016) as between 10 and 19. (2009) He implies this is a new band of development is emergent in industrial and post-industrial cultures. He also suggests during this time of exploration the individual engages in a process of experimentation with identity issues in love, world views and work. Landow ,2009 estimates the beginning of the industrial era as having started in the late 1500's. Shakespeare wearies of this idea of adolescences spanning into an individual's twenties at around the same time as the beginning of industrialisation, his play 'A Winter's Tale' was first performed in 1610-11. The focus during these years is to mature self-sufficiency by becoming personally responsible thus developing the ability to make independent decisions.

Suggesting that "adolescence is a period of life where the brain is particularly adaptable and malleable which is a fantastic opportunity for learning and creativity" Blakemore proposes "the environment including teaching can and does shape the developing brain." (2012, 13.00.00-13.25.00)

In the classroom environment the student and faculty interact, the point of intersection is teaching practice. The student's success in college "is built upon classroom success, one class and one course at a time" (Tinto, 2012, p.4). Tinto goes on to suggests entry-level student non-progression remains high because "most innovations" have sat at the margins of the classroom and have failed to reach into the classroom to substantially improve the classroom experience" (p. 4).

## Connectedness in the classroom: classroom community

"Community is not a place it's a state of mind." (preface) (Stringer 2013) Connection between two individuals is the unit of connection when multiplied creates a web of community. The sense of belonging to a wider community activates the student's perception of being part of a larger group. He suggests that sense of community is context specific. There are many benefits to student who feel they are part of a classroom community.

### Students

Members of a robust classroom community have strong feelings of connectedness. (Rovai, 2002, p.198.) There are various benefits to learners from being part of a classroom community such as peer learning, socialisation, perceived peer support and the general sense of comfort that comes from being part of a group plus access to the resources embedded in the group, both academic and social. According to Glazer and Bingham (2012) students who feel connected to each other through a classroom community report greater motivation, interest and engagement in class. They also suggest the converse is true and if a student does not feel connected to the classroom community he may have difficulty adjusting to the course and has a higher likelihood of dropping out of college.

### Teacher

A strong factor in student's efforts and achievement was student's perception of teachers, interest, support and respect. Brooker's (2008) study details faculty members as having the 'most influence' on a student's sense of connection to a classroom community, and that it is the teacher's actions that have the most significant impact on constructing classroom community.

## Elements of community

Bolliger (2012) cites community and social presence, comfort and facilitation as "factors pertaining to student connectedness". Sergiovani (1999) identifies four elements within his theory of community; reflection, development, conversation, caring and responsibility. Sarason's (1974) theory focuses on the individual.

McMillan and Chavis' (1986) theory of community focuses on the group and identifies four main elements in the development of community: Membership, influence, integration and fulfilment of needs and shared emotional connection. These are further investigated below.

### Membership

Belonging to a group provides boundaries within which its members feel a sense of security. Emotion safety within these established boundaries serve to protect group intimacy. Belonging to the group means being both possessed by the group and possessing the group. The individual earns a place in the group through personal investment. A common symbol system "First and foremost the social bond is the symbolic nature of all true behaviour or interaction." (Perrin, 1977, p.39) "The totality of those who own something in

common." (Konig, 1968, p.15) However, the group uses those who deviate from the norm to establish the boundaries of accepted behaviour.

### Influence

For a member to be attracted to a group he will have to have some influence over the group and equally the group will hold sway over the individual. Group members who acknowledge the values, needs and opinions of others tend to be more influential than those who try to control or dominate often being the least powerful.

The individual's validation of the group's belief system is the pressure behind conformity but also cohesiveness. As the group needs its beliefs validated, members of the group desire to know that what they experience is confirmed by other members of the group. The tension between autonomy and the collective is a natural part of a community; however, the collective actions of the group are based on the needs of its individuals and are negotiated through the power, influence and participation of its members.

### Integration and fulfilment of needs

The group's successes serve to bind its members and justify membership. Another key element is competence where individuals identify the competency of other individual members as attractive and useful to their individual aims. When values are shared within the group a direction is set to meet the common and individual goals. An example of this is the shared value system learned from families operating within a specific cultural context.

### Shared emotional connection

Successfully bringing tasks to completion serves to emotionally bind communities and also creates a positive and common shared history. Another significant emotionally binding agent is 'crisis' and if the task or event is challenging it seems to be a highly bonding factor among individuals.

Shared emotional connection happens through frequency of contact, through the creation of a shared history and shared memories of interaction through communal events. The quality of contact is important in reinforcing or weakening the emotional connection.

The more emotionally invested in the group the greater the individuals sense of connection. The risk of being intimately and emotionally invested in a group leaves the individual not only open to rewards associated with this level of connection but also to receiving emotional pain from community life.

The public rewarding or humiliation of individuals who demonstrate alignment/separation with the communities' belief systems not only impacts on the individual's status within the group but serves to create the boundaries of acceptable behaviour within the group.

The effect of public honour/humiliation group members has a significant impact on this member's sense of belonging/isolation and how attractive/unattractive they are to the group.

Mc Millan refers to a spiritual bond which is difficult to describe and that most communities share to some degree often in the form of a religious belief system.

Mc Millan (1986) summarises by suggesting "…. strong communities are those that offer members positive ways to interact, important events to share and ways to resolve them positively, opportunities to honour members, opportunities to invest in the community and opportunities to experience a spiritual bond among members." (p.14) He also suggests that future research should focus on the causal factor leading to shared emotional connection, since it seems to be the definitive element for true community. Macmillan intimates the user's dynamism in affecting these elements within their community defines their strength and influence within the community.

There are many instruments to measure classroom community such as the Classroom two such tools are community scale (CCS) (Rovai, 2002) and the sense of community index (SCI) these tools are quantitative and used specifically to understand how and why students connect to each other within a classroom community and are based on McMillan and Chavis' (1986) elements of community.

# RESEARCH METHODOLOGY

Figure: 10

Slovakian artist Roman Ondak's interactive installation titled *Measuring the Universe*

(My Modern Met, 2012)

## Introduction

This chapter outlines the choice of research methodology appropriate to the research enquiry “How can I change teamwork exercises to gain a deeper understanding of how and why students make connections to each other during these exercises?”

This chapter examines how accepted belief systems inform research strategy and how this strategy identifies research tools appropriate for gathering data relevant to the research enquiry.

First this chapter reviews accepted belief systems and how interpretivist and pragmatist belief systems influence this research project. The chapter then examines values embedded in the interpretivist and pragmatist belief systems. The chapter subsequently defines, describes and justifies the choice of action research as an appropriate strategy for this research. The choice of the action research strategy is considered in terms of its disadvantages and limitations. Data collection instruments and data interpretation techniques are presented and discoursed. Ethical considerations are identified and deliberated. Finally, the limitations of action research are discussed.

## The nature of knowledge

In conducting a research activity, the researcher attempts to build knowledge. When engaging in social science research Creswell (2003) underscores the importance of stating a knowledge claim to establish how knowledge will be gained and what knowledge will be gained through the enquiry. (see appendix C)

This knowledge claim is the acceptance or belief in the way the world works and is usually referred to as belief system, world view or paradigm.

(Gubu and Lincoln, 1994) see paradigm defined as “the basic belief system or world view that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways (p. 105).” For the purpose of this research the term ‘belief system’ is used.

Creswell (2013) identifies four dominant belief systems: Post-positivist, Advocacy/participatory, Pragmatist and Interpretivist. (see appendix C)

The pragmatist and Interpretivist belief systems are accepted for the initial stages of this research.

## Social Constructivism

This research accepts social constructivism as a sub- type of the interpretivist belief system. The interpretivist seeks to understand the world through the understanding of the thinking and behaviour of those engaged in the research. Social constructivism more specifically looks for understanding through an exploration of the experiences of people as they act in the world and so draws on the participant’s interpretation of a situation. (Brooksbank, 2013)

Social constructivism argues that the ways in which we commonly understand the world, the categories and concepts we use, are historically specific.

These new social realities are usually constructed through the use of language but (Burr, 2014, p. 4) accepts there may be further understanding of differing realities that do not necessarily depend on the verbal description of phenomena. Bruner (1966) puts forward three modes of representation inactive, symbolic and iconic as playing a part in cognitive development. These non –verbal representations of understanding may be significant in a design classroom.  The values inherent in the socially constructed classroom are further discussed (see appendix E)

## Pragmatism

“Consider the practical effects of the objects of your conception. Then, your conception of those effects is the whole of your conception of the object.” (Peirce, C. S. 1878)

Pragmatism sees philosophy best utilised by applying ideas in the real world of human experience. Pragmatism is about action in an ever changing universe as opposed to idealism in an unchanging world. Further discussion of values associated with Pragmatism. (see appendix F)

# ACTION RESEARCH STRATEGY

Figure: 11

Enso by Nantenbo (1839-1925)

(Terebess.hu, 2016)

It has been clear to me from relatively early in this academic journey that my study would be around first year students and how this research may gain a deeper understanding of the progression of these students, it is part of my job as first year head in the Design Faculty in Griffith College. I had reviewed the literature as to why these students don't progress. I had looked to other universities to see what initiatives they implement to facilitate entry-level student progression. I had investigated how other countries facilitate the progression of their students but what I had not done was looked at my own teaching practice and my role in understanding the progression of these students, although in an intuitive way I act on it every day in the classroom. So what was I going to do? How was I going to make all this authoritarian information useful within the classroom where I care about these students and

am aware they are in between, in transition. What was more important academic rigour or investigating the problem?

“I am becoming aware of a gap between theory and practice and how they very much take up separate spaces in my mind, AR is using both together as the name suggests but understanding the concept is not the same as implementing it.” (Reflective journal)

How was I going to make the transition between theory and practice?

Schon elegantly describes this dilemma in his 1995 paper “The new scholarship requires a new epistemology” He describes an academic high ground where problems are easily defined and easily solved through the use of “research base theory and technique (p. 27)” But in the swampy low lands the problems addressed in the high ground are “relatively unimportant to individuals or society at large.” (p. 27)

“The practitioner is confronted with a choice, shall he remain on the high ground where he can solve relatively unimportant problems according to his standards of rigour, or shall he descend to the swamp of important problems where he cannot be rigorous in any way he knows how to describe?” (Schon, 1995, p. 27)

## What is Action Research?

Action research is generally attributed to Kurt Lewin (See appendix D)

There is no simple answer to the question “What is Action Research?” but its aim is to produce real knowledge that is practical and can be used by people in everyday contexts. It is not tied to any one belief system and through the iteration of each step a new belief may emerge as an appropriate driver of the next cycle. As such methods are not clearly set at the start of the process and change according to the new understanding of the problem under investigation. Action Research involves all invested in the problem as instrumental in understanding the problem and so is democratic and inherently ethical.

“…. Action research is a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes grounded in a participatory world view…. it seeks to bring together action and reflection, theory and practice, in participation with others in the pursuit of practical solutions to issues of pressing concern to people and more generally the flourishing of individual persons and their communities” (Reason and Bradbury, 2001).

During the process of this research project I was drawn to artistic product both music and visual art. What came to the surface was that often artistic product speaks of process, I found the action research process closer to the artistic process than the more rigid process of traditional academic research.

“Action research cannot be programmatic and cannot be defined in terms of hard and fast methods but as in Leotard’s (1979) sense is a work of art” (Reason and Bradbury, 2001).

Assemble: A work of art?

“Their structure that was on show at this year’s Turner exhibition must be seen not as a work but as a model of work that takes place elsewhere; not in the art world, but in the world itself.”

Fig. 12

http://www.theguardian.com/artanddesign/2015/dec/07/turner-prize-2015-assemble-win-by-ignoring-art-market

## Justification for use of action research strategy

Justification for the use of action research as methodology for this research project is based on the principles of action research as defined by Coughlan (2002, p. 224-226) and McNiff (2014, p. 23) listed below:

### Action Research takes action, it is goal oriented, and it is about change

"If you truly want to understand something try to change it" (Lewin, 1946). This research seeks to gain a deeper understanding of how and why students connect to each other during first year design studio team exercises. More specifically how I, the educator can change my teaching practice to investigate student connectedness during team exercises within the classroom context.

### AR can include all types of data gathering methods

Action research can involve a variety of data collection methods (O'Brien, 1998). This research uses a multi-method approach. The data comes from many participant sources such as student and colleague perspectives and my own reflective journal. As the cycles progress a different type of data gathering may emerge as appropriate to further drive the project.

### Being collaborative and democratic AR prioritises the wellbeing of others; it is values oriented and inherently ethical.

The purpose of a collective examination of student connectedness within a classroom and faculty context is to search for insights that could inform the design and application of strategies leading to an improvement in the understanding, experience and efficiency in the contexts in which the participants operate. It is a collaborative attempt to improve (Stringer 2013) "…. through action and experimentation in context, and participatory democracy as both method and goal (HQR p.57)."

### AR is context driven, it aims to solve a problem and contribute to science

The research is conducted in the first year design studio classroom in Griffith College; where we (students, studio tutors and faculty) in the social constructivist and pragmatic sense co-construct knowledge practical to the classroom context. AR is context driven, (Dick, 2003, Bartunek and reis Lewis, 1996) it is an approach that offers an opportunity to research, improve teaching practice and improve the context by all within that context. This research aspires to making a knowledge contribution to the discourse around 'connectedness' as a theme affecting entry-level student non-progression.

### AR is self-reflective

Action research involves designing, action, reflection and observing. The ability to reflect is a critical to the action research process, by using a reflective journal to become aware of my own learning process, revealing the process, and understanding how this consciousness leads to change and informs my own practice (Mc Niff, 2013, p.24).

### AR is critical

Action research, through direct action in context, aims to solve real problems and moves towards collective improvement. It challenges traditional ways of operating within education and research contexts.  (Jordan and Kapoor, 2015).

### AR should be conducted in real time, is evolutionary and open ended

This research is conducted in real time during scheduled classroom time, each evolution of the cycle though the reflective process leads to further understanding of the problem under investigation and so drives the planning and action for the next cycle.

### AR requires its own quality criteria

“Action research should not be judged within the criteria of positivist science but rather within the criteria of its own terms” (Coughlan, 2002, p. 226.) He goes on to suggest it should be judged according to the following criteria:

1. Does the research demonstrate cooperation between the action researcher and members of the organisation where the research takes place?
2. Is the research driven by iterative reflective cycles with the goal of improvement for all within the research context?
3. Plurality of knowing, experiential knowing with a view to progressing knowledge on many levels
4. Is the work significant?
5. Is the research capable of producing sustainable change?

The advantages and disadvantages of are further discussed in the appendix (See appendices G and H)

## How is action research used?

This research will use the action research model devised and objectified by Kemmis and Mc Taggart (1998) shown below where every time the ‘action, reflect, plan’ cycle is used it further refines the methods, data and interpretation through the understanding gained in the previous cycle.

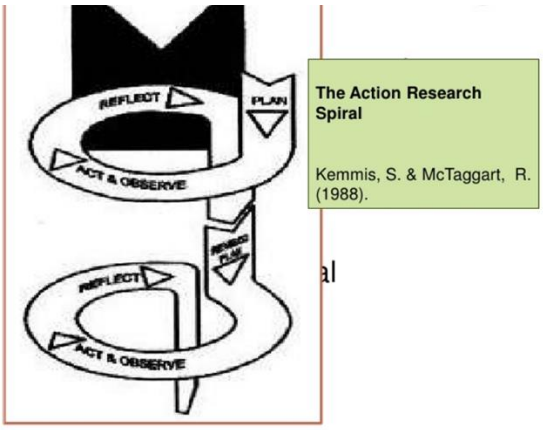



Figure 2.

The action research spiral Kemmis and Mc Taggart 1998 (Slideshare.net, 2010)

## Action Research in Education

The action research method is about discovering what works best in the context of your own classroom environment. Student groups come with various skills, life spaces and learning styles. The teacher refines teaching practice to find the best fit for the context. (Mettetal, 2012)

AR in the classroom “…typically involves the use of qualitative, interpretive modes of inquiry and data collection by teachers… with a view to teachers making judgements about how to improve their own practice.” (Mc Niff 2014, p.11)

## Research design

Action research is an emergent process which takes place gradually through enacting a series of cycles. The earlier cycles are used to inform the design and action of the later cycles “In the later cycles, the interpretations developed in the earlier cycles can be tested and challenged and refined” (Dick, 2002)

### Statement of research Questions

The questions driving interpretive research are general enabling the Participants in the research to construct an understanding of the situation created through discussion and interaction. Creswell (2003) suggests that in a qualitative study the researcher states a research question, not an objective or hypothesis. He recommends the researcher ask a central question which is broad in nature and asks further sub questions associated with the central question. He advises the central question be broad in character “so as not to limit the enquiry” (P.105).

**CENTRAL QUESTION:** How can I change teamwork exercises to gain a deeper understanding of how and why students make connections to each other during these exercises?

**SUB QUESTION:** If I ask those invested in the progression of entry-level students to reflect on their experience of student connectedness in the classroom how will this inform the plan for the first action step in this AR project?

**SUB QUESTION:** If I redesign the class plan to use a time constraint (10 mins) while student teams apply new concepts to a task how will the student’s perception of connection during this process inform the next cycle of the AR process?

**SUB QUESTION:** If I redesign the class plan to use a time constraint (25 mins) while student teams apply new concepts to a task how will the student’s perception of connection during this process inform the next cycle of the AR process?

**SUB QUESTION:** If I redesign the class plan to create a ‘safe emergency’ while student teams working with a time constraint of 25 mins find information for the final studio brief how will the student’s description of connection during this process inform the next cycle of the AR process?

## Data collection instruments

### Reflective journal

Reflective practice is the process of becoming aware of how we do what we do. Critical reflection is central to the AR process. This reflective journal would enable me to investigate my own perception of what was happening during the team work projects.

### Informal discussions with students and faculty members

Informal discussion with faculty members and students informs teaching practice, where information meanders through less formal channels and can sometimes be more informative, honest and revealing than more formal ways of gathering information. I took into account some of the more casual conversations I had with faculty members during this research process.

**Faculty focus group questionnaire** (see appendix J)

I conducted focus groups with members of the design faculty to build an understanding of attitudes to student connectedness within the classroom. I wanted to understand their interpretation of student connectedness in the classroom particularly with regard to teaching strategies.

**Student reflective piece** (see appendix M)

I asked the students to reflect on the two team work projects to gain an understanding of not only how they understood connection but how and why they thought they connected to each other during these projects.

**Student questionnaires** (see appendices O, P, Q)

I asked the students to answer a survey directly after each action cycle. I wanted to understand connectedness from the student's point of view and their thoughts and feelings would provide information necessary to plan the next cycle of the action research project. The use of a questionnaire would enable the students to give an honest response and could capture the perspectives of the less vocal students in the class.

## Ethical considerations

Educational research bears ethical responsibility to all stakeholders affected by the research. These groups may take the form of participants, sponsors of research, the community of educational researchers, educational professionals, policy makers and the general public. (BERA, 2011)

Within the context of the educational research I conducted I bore ethical responsibilities to the participants of the study and to the community of educational researchers.

**Informed consent** (see appendix I)

All participants of this research project gave their informed consent to be part of this action research project.

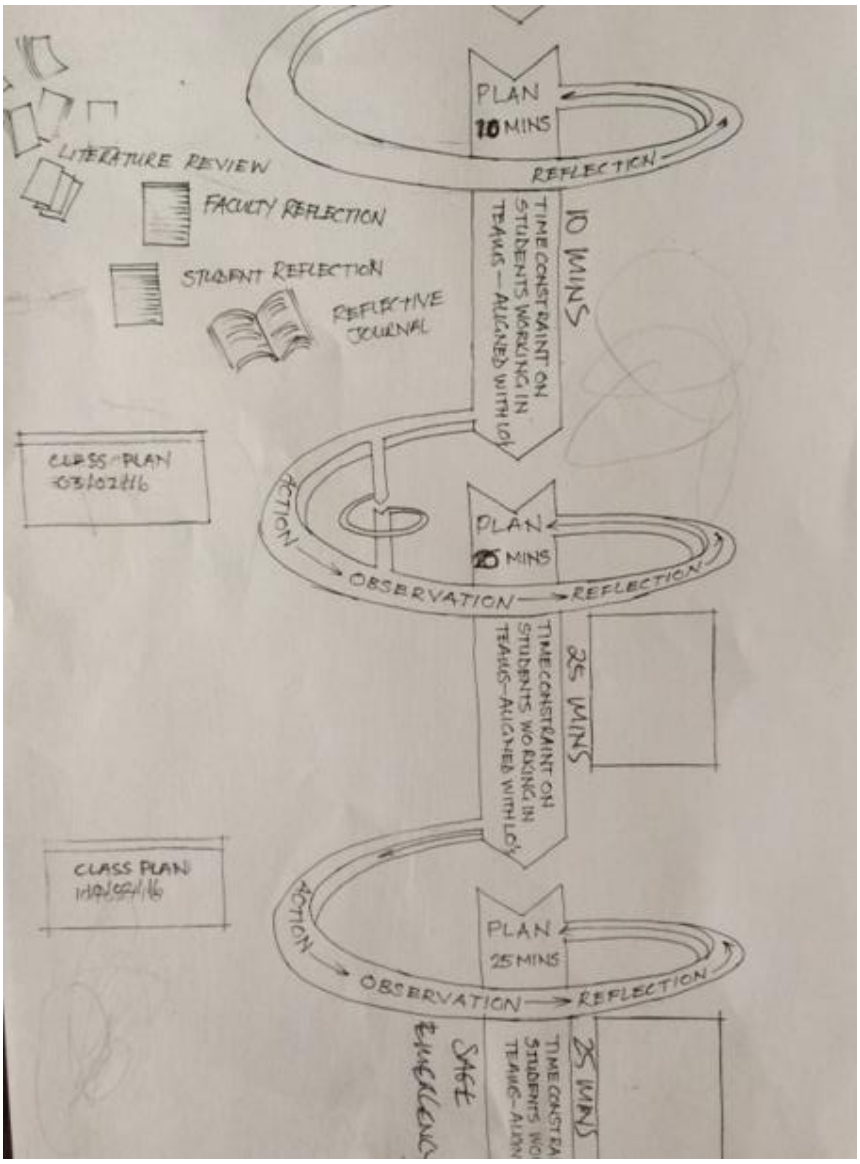
**Confidentiality and Anonymity**

All responses to surveys were anonymous and all participants were made aware of this before they were asked for consent.

Action research is inherently ethical as it is values based and involves all invested in the problem working together to produce a solution.

**Limitations of the methodology** (see appendix R)

# THE RESEARCH




## Introduction

**PURPOSE:** The purpose of this research is to investigate entry-level student's perspectives on connectedness during team projects in a design studio classroom.

**QUESTION:** How can I change teamwork exercises to gain a deeper understanding of how and why students make connections to each other during these exercises?

**QUESTION:** If I ask those invested in the progression of entry-level students (Classroom teacher, faculty and students) to reflect on their perspective of student connectedness in the classroom how will this inform the plan for the first action step in this AR project?

Cycle one of this action research project enters the process in reflection. To really get a deep understanding of the theme of connectedness and how all participants perceived it I felt it was necessary to ask them, all of them. All stakeholders with in the educational context had an input into co-construction the plan for the action step of cycle one. This reflection happened in three parts they are as follows:

### Reflection

#### The researchers reflective journal

I kept a reflective journal for the duration of the studio teamwork projects. In this journal I noted my own thoughts and feelings about student connectedness and my own teaching and learning.

#### Student reflective piece

I asked the students to complete a survey reflecting on their experiences of connectedness during the studio team projects.

#### Faculty focus group

The purpose of conducting this focus group was to investigate through a mix of participant held belief systems, perceptions and observations of connectedness in the classroom through their experiences of teaching practice.

### Plan

The plan evolved based on choosing a theme that emerged from the literature review, reflective data and my reflective journal. The planned ‘action’ for the first cycle in the action research process took a pragmatic approach by layering the action step into the class plan. I executed a simple step and each progressive step was a small change of this initial step.

The ‘planning’ of the action step involved applying a time constraint during a team exercise. This meant altering my teaching practice to use time more efficiently and specifically. So as not to lose sight of the primary educational purpose I aligned the team task with a learning outcome for the project. This plan would serve three functions as follows:

1. Changing my own teaching practice to investigate connectedness between students within the design studio classroom context.
2. To explore the student experience and response of connection while working in teams under a time constraint.
3. To research connectedness in the classroom with entry-level students as their described experiences may have an impact on future educational planning for entry-level students in the Design Faculty in Griffith College.

### Action

The action took place in the classroom in real time during a design studio project. The students worked in groups and a time constraint was applied as they worked together. The 'action' of the AR cycles would happen on three consecutive Wednesdays. This day became known as 'social science Wednesday'.

### Observation

There were two studio tutors in on 'social science Wednesday' and we discussed our observations of student reaction to the implemented action step. The effect of the action step in terms of connectedness was immediately apparent, and in the student response other themes, observations and comments emerged that led to the next plan for the AR process.

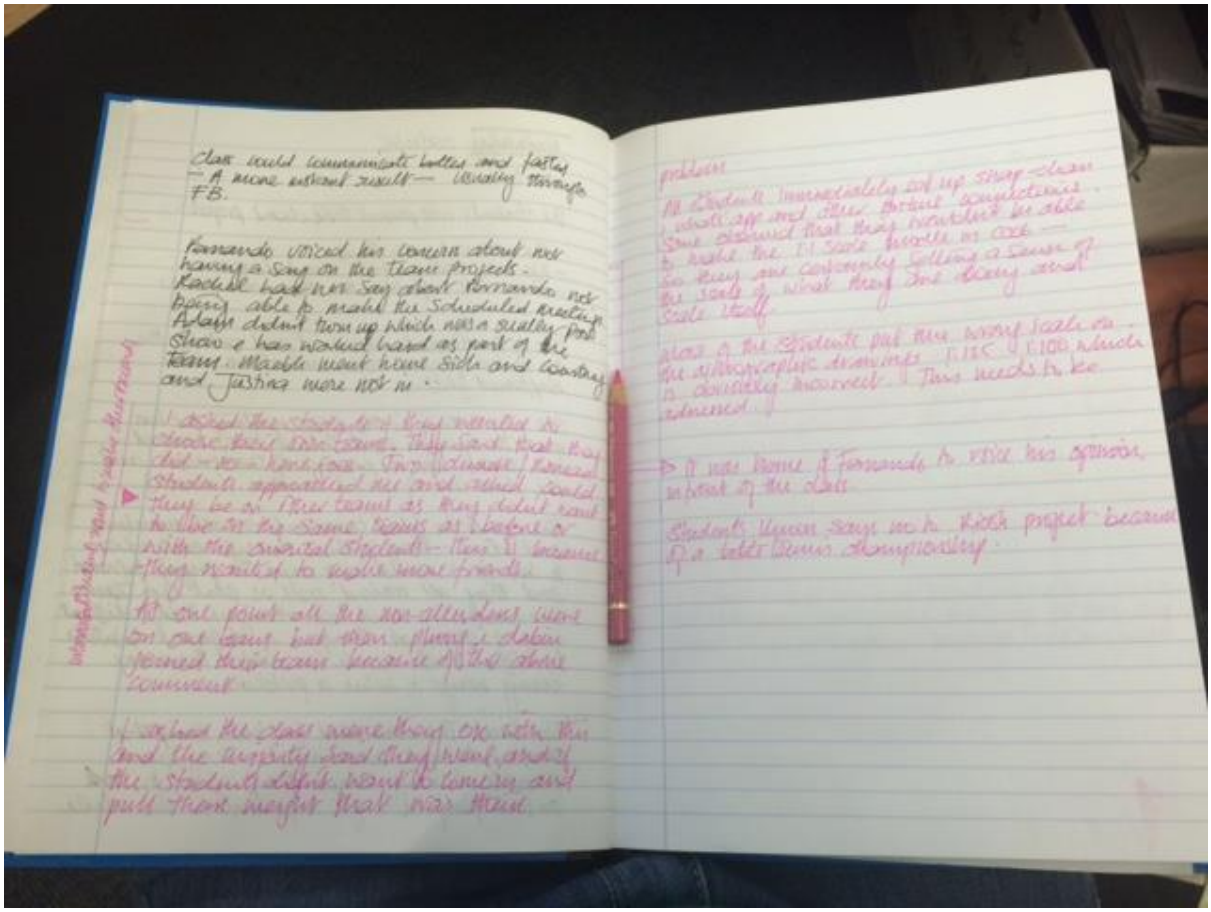
## Cycle 1 - Reflection

### Faculty Reflection

The focus group was comprised of five participants and the researcher [myself]; three men and three women, three from a design background and three from a fine art background. All six are involved in industry, four in the art and design sector and two in other industries. Discussion during the focus group was easy and free flowing and various perspectives of student connectedness emerged.

The data was read in terms of emerging themes. The themes are as follows: Lecturer to student connection, student to student connection, collective, commonality, industry, competition, autonomy and group, space, student time in life, time and a moment of synchronicity. Each theme is further discussed (see appendix K)

## Reflective Journal



There were many unknowns as I started this AR process., the process of AR, what connectedness really is and its relevance for entry-level students. Becoming aware of the separation of theory and practice. Various veils dropped during cycle one of this AR project intellectual, emotional and psychological. (see appendix L)

The reflective journal documented my observations and thoughts about how and why students made connections with each other and general observations about what is happening in the class. Reflective Journal studio team projects (see appendix S)

## Student Reflection

**Student reflective survey** (see appendix M)

Based on the literature review the student reflective survey was broken down into various questions all based on Mc Millan and Chavis' (1986) paper "a sense of community, a theory

and a definition". The purpose of the survey was to investigate how and why the students made connections during the team work projects. If of course they did. I have broken this down by question unlike the faculty focus group or the reflective journal, the rationale is that I am looking for specifics from the student perspective. In order to establish whether the students for example felt a sense of community, they have to say they did or didn't then explain as to why they felt this was the case. The use of the chart shows each section as part of the whole. The breakdown of the student response to each question can be seen in (appendix E).

There were mixed feelings of connectedness to the class as a whole but suggestions that the students do want to feel connected to their class.

Group members having different perspectives is perceived both as a positive and a negative. Those who preferred to learn as a team felt that they produce a better result from the combination of knowledge. The students who preferred to learn alone mainly cited difference in learning styles.

One comment suggested a preference for completing projects alone because of a difference of time management abilities within the group. Another comment suggested the students thought they would enjoy working with their friends more but they "played" so much they ran out of time.

The students felt the projects were difficult mostly because of time issues.

Students felt the most enjoyable aspects of team work were making friends and successfully bringing the projects to completion.

## Analysis and resulting question

Many contradictions emerged from the reflective part of cycle 1 of this AR project including: Conflict v communication, Commonality v difference, collective v individual, competition v collaboration, energy v lethargy, isolation v connection.

The table below presents a summary of themes emerging from the various reflective exercises in Cycle 1.

| Different perspectives on 'Connectedness' | LECTURER STUDENT CONNECTION | STUDENT STUDENT CONNETION | COLLECTIVE | COMMONALITY | INDUSTRY | COMPETITION COLLABORATION | AUTONOMY V GROUP | TIME IN LIFE | SPACE | TIME | ENERGY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FOCUS GROUP | Lecturer student connection can effect or demonstrate to the student 'how' to connect. | Conflict v communication | Collective v individual | Commonality v difference | Collaboration skills absolutely necessary for industry | Competition natural<br>Collaboration necessary | Successful teaching strategy combined group with individual work. | Unsure of yourself, don't have experience, afraid to fail. | May be shifting<br>Physical v virtual | By forcing time students connect through the task. Students come to be interested in their own time | One participant speaks of students being 'shattered' after the group |
| REFLECTIVE JOURNAL | As lecturers in the classroom context we do have a part to play in mediating difference and conflict | Conflict v communication | Collective v individual | Commonality v difference can cause conflict. Too similar too much fun. | Some students understand the importance of collaboration in industry some do not | Competitive and driven students don't like to be limited by the collective ability of the team. | The intersection between the collective and the group difficult for | Students complete projects at the last minute. Don't understand how long it takes, no experience | Group work breaks spatial barriers. Defining interaction type dictates how the students act interacts. | Difference of perception of time causes conflict in group work s does difference of available time | Through observation I become acutely aware of the difference in |
| STUDENT FEEDBACK | There is conflict, communication and a social element | Conflict v communication | Collective v individual | Commonality v difference | Some students understand the importance of collaboration in industry some don't | More competitive students can be more self-reliant and can generate conflict | Learning as part of a group symmetrical split. Bring projects to | No particular reference to time in life. | No mention of space. | Students had difficulty ifficulty managing time. | No mention of energy, |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **LITERATURE REVIEW CONNECTDNESS** | **Creating a shared learning space. "A shared space for emerging relationships…" "…. serving as the** | **Shared learning space, access to the resources of the group.** | **Connection is the e stuff that binds us from individuals to larger groups.** | **Commonality V Difference** | **Technology rewiring our brains, More collaboration and connection.** | **This can be cultural with some cultures focusing on the individual and some on the collective.** | **Transcendence of the self to become part of a group.** | **A time for experimentation with love, work and world views. A time of influence and great creativity** | **Physical proximity important of connectedness.** | **Students cited time management and social skills as the most difficult aspects of transition.** | **Connectedness is the energy between us** |

During this reflection power dynamics, social capitol and conflicting opinions as to whether space was relevant with regard to student connection emerged. The contradiction around connectivity (to the internet) and connecting to the immediate environment is thought provoking. One focus group participants comment about the internet being the greatest threat to connection.

Three examples of teaching practice implemented considering connectedness using a time constraint. And a moment of synchronicity during the focus group where the collective, the deadline and connection seemed to unite.

To investigate all these themes is outside the scope of this research so I had to choose one to look more closely at. I had to be able to investigate connectedness using my teaching practice within tight time fame.

**From the faculty's perspective**

There were many references to time throughout the focus group discussion and the idea that the students are from a different time to us and that their world and our world are two different places. Many of these comments came as answers to the question of space or the question about teaching strategy.

> *"Their attention span is different….so I think it's a challenge to teach people in that mode."*
>
> *"Their world as opposed to our world"*

Two of the successful teaching strategies designed to encourage connectedness used a time constraint and successfully met the learning outcomes.

One of the participants, originally from Germany discussed a teaching strategy that he experienced in College called 'steikheif Entwurf' which roughly translates as 'adhoc collective'. The students were obliged to complete a group project as part of their yearly

learning. This project involved a combination of students from all years. They College didn't make a big deal about it in terms of assessment. This group of students would have to complete a design project within six hours. The students had to connect to resolve the brief.

> *"In that group you have to be pretty much connected, so within the six hours you have to find your leader, supporter, all the roles, you have to find your social standing in the group, then design… together…. learn to collaborate."*

Another teaching strategy involved the students working in teams for the initial research part of the project again under a time constraint, then bringing the project to completion alone.

> *"Their final brief six weeks later was far stronger when they had worked as a group [in the initial research part of the project] ….and they were all exhausted [after the team work part of the project]."*

There are various ways of reading data and my own positionality reflects what I see in the material. But there was a moment during the focus group when one of the tutors was talking about teaching practice with regard to connectedness and how the students had to 'quickly' get the work done as it was a requirement of the task. I wanted to clarify that the students had a time restriction so I said:

"That's you know, talking about time and almost forcing them into action".

Then this happened:

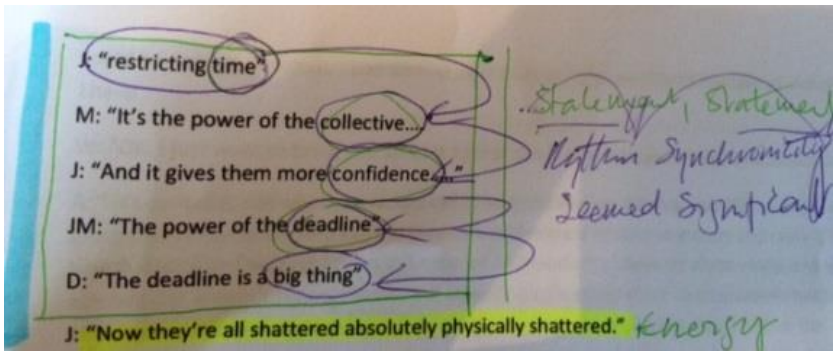



Fig 3.

How I saw this:

1. Equal voice of participants
2. Equal short succinct response
3. Different perspectives but rhythmic and whole.

It seems that a time restriction within group work leverages the power of the collective and the power of the deadline to create a third thing – connection?

**From the perspectives of other researchers**

In a focused research report (no. 6) 2016 specifically examining students' experiences of the transition to higher education in Ireland. The report indicates that students cited "time management skills and social challenges amongst the most challenging aspects of transition" (p.79)

**From my perspective**

We can interact with students in a genuine and authentic way in the hope of demonstrating this kind of communication to them but how they interact with each other really is 'their world'. As students bring their belief systems with them, there will be conflict and misunderstanding; most social situations have some sort of power dynamic so I expect this to some degree in the classroom and accept this is normal. I can however change elements of my teaching practice.

Over the years I've come to realise that students do the bulk of the work at the last minute, on reflection I think this is because the tasks are new to them so they can't quantify how long it is going to take them to complete the task.

> *"The students did most of the work during the last two hours of the project"* (reflective journal 16/12/15)

Having issues with time management myself now a student a few months into this research project I realised I was underestimating the amount of time I would need to bring the project to completion.

> "…. measuring time is always something I have struggled with…"
> (communication with supervisor email 8/01/2016)

**From the student's perspective:**

This is an interesting comment, the student felt more comfortable working alone and managing his/her own time; but liked working as a team when the work was shared.

> *"I think alone because of time management; you don't have to be relying on anyone or be dependent on anyone else. I like working as a team and sharing the work."*

This comment came as an answer to the question reflects comments from the focus group that the combination of team work and individual work as an improvement to team projects.

> *"Maybe more work as a class as the teams may have the same questions. And then go off into our groups."*

One comment suggested working with your friends can cause you to run out of time, perhaps time spent working and time spent playing is difficult to balance. What is the relationship between time spent working and time spent socialising? What's the problem here? The literature suggests the students said the most difficult aspects of transition were time management and social challenges.

> *"We picked our team so I thought it would be easy, but working with your friends, you play so much and you run out of time."*

**Resulting question**

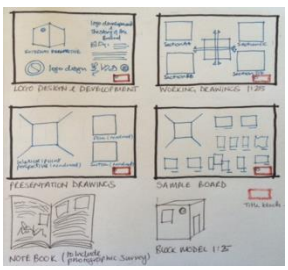
Based on the reflection, a new question resulted, namely: If I redesign the class plan to use a time constraint while student teams apply new concepts to a task how will the students' perception of connection during this process inform the next cycle of the Action Research process?

I therefore chose to introduce a 10 minute time constraint into the class plan with the intent to subsequently analyse the resulting reflections.

## Cycle 1 – Plan

### Class Plan

The following table shows the class plan with the 10 minute time constraint.

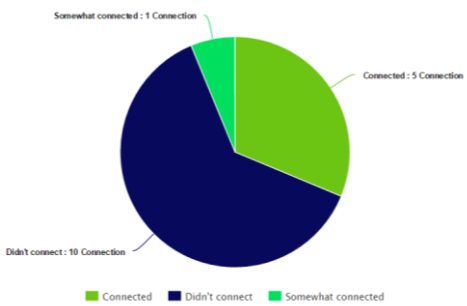
| Class plan 10/02/16 | | | |
|---|---|---|---|
| **Time: 2-5pm** | **Interaction type** | **Method** | **Topic** |
| 2.00-2.20 | Traditional | Lecture: Visual presentation, working drawings and presentation drawings<br><br>Time: 20mins | Thumbnails of presentation boards<br>  |

| | | | |
|---|---|---|---|
| 2.20-2.30 (10 min time constraint) | Group interactive | Draw thumbnails of working drawings using template discussed in lecture. Apply to studio project. | |
| 2.30-3.15 | | | |
| 3.15-3.30 | Break | Break | Break |
| 3.30- 5.00 | One to one student/lecturer<br><br>Individual design development | Studio | Studio |

## Cycle 1 – Action and reflection

The following table summarizes the actions that were incorporated into the plan with the new time constraint as well as the reflections by the students after the time constraint was implemented.

| | |
|---|---|
| **ACTION** | Implement new class plan with a time constraint (10 mins) 10/02/16. Lecture (no more than 20 mins) Apply new concepts (thumbnails of final presentation) to individual projects within groups, discuss with other students to build understanding of task. 10 mins The student groups were chosen randomly. |
| **REFLECTION**<br><br>**Students** | Q. 1 Do you feel like you connect well to other students during the 10 min session? Why? |



The students mostly didn't connect as the time frame was too short and so they were more focused on completing their own task than interacting with each other. The task applied to their own project so the students were not working towards a common goal.

> *"There wasn't much talking to be done during the 10 min team session as we were limited with time and we had our own individual ideas to concentrate on."*

> *"Not that well, first because we must focus first to do our own task and we don't have time to ask each other. Because everybody [is] busy."*

There was also a sense that it depended on how individual students learn; that interacting as part of a group may not be the ideal way to learn for all students.

> *"Not that well because everyone learns differently."*

One student commented that as the task wasn't that difficult there wasn't the need to connect but it had worked better during other team exercises.

> *"No, In this particular exercise [~~session~~]. In others it was good. This is because the session wasn't that hard."*

### Q. 3 How do think a time constraint helps you connect to other team members?

Many students felt the time constraint stopped them connecting to other students and didn't want to answer the questions the other students had as this would get in the way of them completing their own task.

*"I feel that it can potentially waste some peoples time because everyone is asking them questions then they can't complete their task."*

Other students appreciate the time constraint helps them focus and complete the task but doesn't make them connect to each other.

*"The good part is that we try our best to complete [the task], but it can happen that we don't interact because of the time constraint."*

Another student felt through discussion with others they would quickly resolve the problem or task they had been given.

*"I think that it can make you talk to each other to try to quickly come up with solutions."*

**REFLECTION**

**Studio Lecturers**

The students didn't particularly connect to each other as on reflection the time restriction may have been too short.

They were also applying a concept to their own studio project which meant they were not working towards a common goal.

The students who understood what was required from the lecture didn't appreciate the connection of others as they were focused on completing their own task.

The time restriction focused the students on the task. Most students responded well to the time restriction.

Some of the student comments suggested connection and interaction as a mode of learning does not suit all students.

The 10 min time constraint seemed to be too short to set the conditions for connection and as the pilot worked better I would consider replicating the 25 min time constraint.

I would also consider more of a common goal to work towards as in the last 'action' the students were very focused on their own projects.

## Cycle 1 – Observation

The following table summarizes the observations made in Cycle 1.

| | |
|---|---|
| **OBSERVATION**<br><br>**Studio lecturers** | The students don't seem to be interacting during this time constraint. The classroom is quiet, very few students are talking to each other.<br><br>They are focused on the completing the task within the short time frame.<br><br>The students who didn't completely understand what they had to do from the lecture need to interact to gain a better understanding of the task. The students who understand what is required from the lecture don't want to connect to others as they are focused on completing their own task. |

## Cycle 2

| THE APPLICATION OF A TIME CONSTRAINT TO INVESTIGATE STUDENT CONNECTION | |
|---|---|
| **Question** | If I redesign the class plan to use a time constraint while student teams apply new concepts to a task how will the student's perception of connection during this process inform the next cycle of the AR process? (25 mins) |
| **PLAN** | |

| **Class plan 17/02/16** | | | |
|---|---|---|---|
| **Time: 2-5pm** | **Interaction type** | **Method** | **Topic** |

| | | | |
|---|---|---|---|
| 2.00-2.20 | Traditional | Lecture<br><br>Time: 20mins | Making a presentation, telling the story. |
| 2.20-2.40 | Casual discussion<br><br>Individual research | Trip to the samples library | Material finishes |
| 2.20-2.45 (25 min time constraint) | Group interactive Randomly chosen | Research in teams your assigned material/finish | Research material finishes:<br>1. Flooring for commercial interiors<br>2. Materials for commercial kitchens<br>3. Wall finishes for commercial interiors<br>4. Wood and metal in commercial interiors. |
| 2.40-3.05 | Group present | Brief presentation by team members; consider the structure of your presentation and what tools you have to | Discuss your material finish and why it is suitable for a commercial interior. |

| | | | |
|---|---|---|---|
| | | make the presentation.<br><br>Time: 5 mins | |
| 3.15-3.30 | | Break | Break |
| 3.30- 5.00 | One to one student/lecturer<br><br>Individual design development | Studio | Studio |

**ACTION** Implement new class plan with a time constraint (25 mins) 17/02/16

1. Lecture (no more than 20 mins)
2. Trip to samples library
3. Apply new concepts collectively

Groups of students have (25 mins) to apply learning then make a 5 min presentation. They must interact to organise the presentation – Then make the presentation. (This is the change)

4. Apply the learning to the studio project individually.
5. The student groups are arranged in a random fashion.
6. There is a common goal. (presentation)

**OBSERATION** The students are somewhat connected to each other, they seemed focused and gathering the information through researching on their phones, mostly on their own. The students are connected to the web not to other students in their immediate physical environment. There is for the most part silence in the class as they look for information on their phones.

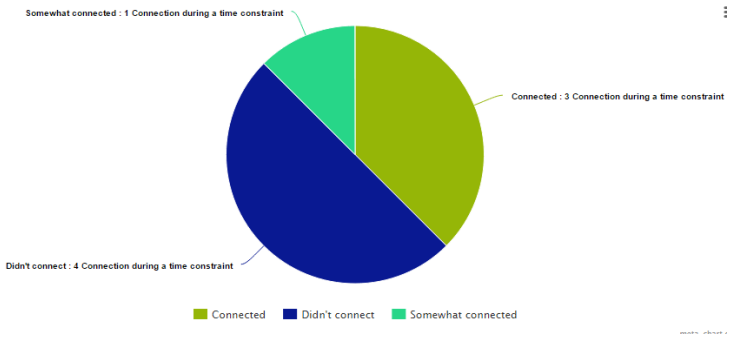
They are connected to the task and some groups are talking to each other about the information they are discovering.

One student says she is beginning to understand the significance of commercial materials for the studio project she is working on.  Some student teams worked better than others.

The students are really enjoying the trip to the samples library, they are touching the material samples to get a sense of their texture.

**REFLECTION STUDENTS**

Q. 1 Did you feel like you connected well to other students during the 25 min team session? Why?




The students were split as to why they connected or didn't, some groups totally disconnected but couldn't give a reason as to why this happened.

*"We all divided, I'm not sure why."*

The comments suggested they were disconnected from each other through using the mobile phone to research the topic; they were not looking at the same thing.

*“Because we’re using our own phones, so we couldn’t look at the same time, as we would in a computer, magazine or book.”*

Other students did connect and talked to each other about what they were looking for.

*“Because we worked together efficiently, helped each other when someone needed help.”*

Q. 4 How do you think a time constraint helps you connect to the exercise of completing the task?

In response to question four the students mostly thought the use of a time constraint helped them understand time, focused them, and stopped them from procrastinating and over thinking the task.

*“It teaches time management as well as getting the work done together”*

*“It prevents us from procrastinating.”*

*“It rushes you to get the job done quicker and you don’t over think it.”*

*“It helps to concentrate.”*

*“I think it puts pressure on you but it can encourage you to learn.”*

**REFLECTION LECTURERS**

Using their mobile phones to research serves to disconnect them from those in their immediate environment.

They gained knowledge of materials and of the samples library and gained an understanding of what they needed to look for to produce an appropriate materials board for the project.

Some groups worked together more than others but it didn't particularly work in connecting them to each other. Both myself and the other studio lecturer agreed some groups of students seemed more connected than others.

On reflection they were researching slightly different things and although the initial lecture was on presentation their presentations were not that cohesive.

Perhaps in order to organise the group presentation they would need more time to bring it together.

Did the use of a time constraint connect the students to the task and help them focus and get the job done?

some students suggested the time constraint during a team project would not only teach time management but it would also teach them how to work together.

Does the time constraint connect them to the task but not necessarily to each other?

Is a time constraint one component in getting the balance of the class plan right when investigating connectedness?

### A SAFE EMERGENCY

During the previous two cycles we looked at applying a time constraint on when students worked together in teams. The application of a time constraint is structural, connectedness is described as structural and subjective (Joiner, 2007) so perhaps layering in something subjective may further inform the understanding.

One of the focus group participants further explained how 'steikheif Entweurf' worked during an email conversation.

*"…. What made them different from other design assignments was that we were not mentored or tutored …. The focus was on innovative response."* (email conversation 27/01/16)

Cozolino and Sprokay (2006) suggest there is an optimum emotional condition for learning; they call this a 'safe emergency' where there is a state of high attention without the debilitating anxiety. (p. 12)

## Cycle 3

| CREATING A 'SAFE EMERGENCY' TO INVESTIGATE STUDENT CONNECTEDNESS | |
|---|---|
| Question | If I redesign the class plan to create a 'safe emergency' while student teams working with a time constraint of 25 mins to find information for the final studio brief how will the student's description of connection during this process inform the next cycle of the AR process? |
| PLAN | |
| | Usually I would go through the brief with the students. This time they would find the brief themselves (find it on Moodle and print it out). |
| | The brief specified what teams they would be in defined by the client they would be designing for; so they would have to read the brief to know what team they were in. When they found their teams they would get together and discuss the final studio brief. |

We would Keep the time restriction of 25 mins so the students would connect to the task. There would be a common purpose as in this class the students get the final studio brief.

I wrote the instruction on the whiteboard and left the room, On the instruction was the note that I would be back in 25 mins to answer any questions they may have about the brief. So although they were on their own to get, figure out what they knew about the brief I would be back to answer any questions they may have.

ACTION

| **Class plan 24/02/16** | | | |
|---|---|---|---|
| **Time: 2-5pm** | **Interaction type** | **Method** | **Topic** |
| 2.00-2.10 | Traditional discussion | Give task | Find the information |
| 2.10-2.40 (Change) safe emergency. | Students find information | By whatever means | The final studio brief |
| 2.40-3.00 | Students get into groups of seven to individually read the brief then discuss it together | Find, understand, discuss | Being motivated to find information relevant to you.<br><br>Engaging with each other to build understanding. |
| 3.00-3.15 | Class discussion, whole class and lecturer interaction. | Through discussion Answer questions | Gaining an understanding of the brief |

| | | | |
|---|---|---|---|
| | | about the brief and discuss the brief, time line and | |
| 3.15-3.30 | | Break | Break |
| 3.30- 5.00 | Get to know your client<br><br>Emersion multi-sensory.<br><br>Teams/individual/<br><br>Lecturer-student one to one. | Studio | Studio |

**Observation**

The students are attentive with this new approach. A sense of tension ensues and an immediate connection to the task. The other studio tutor commented that he perceived this was the case.

When we returned to the classroom all students present had printed out the brief and were in their teams discussing the brief. This is a result as we can get to the end of a project and very few students have read the brief sufficiently.

**Reflection studio lecturers**

This seemed to connect them not only to each other but also to the task which they fulfilled within the 25 min timeframe. When it came to 4.05pm the students were still in their groups, we hadn't asked them to stay grouped.

One team were all sitting on a table, I like it when the students do their own thing with regard to classroom space, it makes me think they are engaged with their work and forget what the environment is dictating for them. I

mentioned this to the other studio lecturer who said: *"they're not intimidated by the space."* Yes, that's exactly what it is, I thought.

The students found out many different things about the person they were designing for. Some students got a lot from researching a creative person and it opened the door to potential inspiration they may need to generate a design for the final project. This is the intention of this project, the students understand their creative client on various levels.

One student said: *"I feel I know myself better after researching David Bowie."*

This student found semester one difficult, she wasn't sure if the course was for her and being a little older and with more responsibility to shoulder she didn't connect that well to the class.

Did students connect to each other when we (the studio lecturers) were not there? Or because they had to find the information themselves?

Did the students connect to each other when they "excited and relaxed" (student response) about the final project?

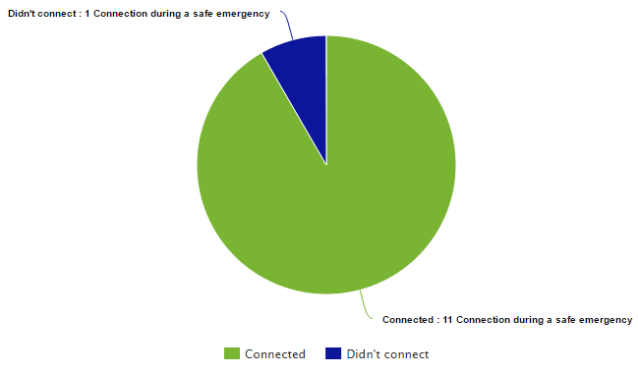
Did the students connect because of the novelty of the class?

Did the students connect because they found the final project more interesting or challenging?

Did the students connect because they had to construct an understanding of the brief themselves?

**Reflection students**

Q. 1 Did you feel like you connected well to other students as you were looking for the information for the final project? Why?




| | Student | Yes/no | Q. 1 Did you feel like you connected well to other students as you were looking for the information for the final project? |
|---|---|---|---|
| 1 | A | YES | - |
| 2 | B | YES | I enjoyed researching the same subject with others in my group. It was quicker, we found out more. |
| 3 | C | YES | |
| 4 | D | YES | Yes, I think that not knowing the project made us want to work together to find out what it was. |
| 5 | E | YES | - |
| 6 | F | YES | Everybody had questions about how to go about the project, which helped clear up any confusion. |
| 7 | G | YES | Because it is interesting. |
| 8 | H | YES | Cuz everyone is concerned about the final project and we really speak to each other about what's going on. |
| 9 | I | YES | Because they're all nice and we can find the information easier. |
| 10 | J | YES | Because we'd different things about the client and share with others. |
| 11 | K | NO | Because they didn't know any better than the teacher. |
| | | | 10/11 of students felt they connected well to other students as they were looking for the information for the final project. |

Most students felt they connected during this action cycle. They then commented on why they thought this was the case. But looking at the action words many students wanted to communicate with each other to find out. They also use words like ‘we’, ‘everybody’ and ‘us’ perhaps suggesting they are connecting.

# CONCLUSIONS AND RECOMMENDATIONS

The purpose of this research was to gain a deeper understanding of how and why students connect to each other during team exercises in a design studio classroom.

## Results

The initial action research cycle focused heavily on reflection with data being gathered from a number of perspectives, my reflective journal, a faculty focus group and a student reflective piece.

The theme of ‘time’ emerged generally from this reflection; more specifically related to teaching practice by using a time restriction on team work exercises; this surfaced from a ‘moment of synchronicity’ during a faculty focus group where the perspectives of the participants came together to form an understanding of the use of a time constraint as teaching strategy and student connectedness.

### Action research cycle 1. 10 min time constraint

The students felt when the 10 min time constraint was too tight during a team exercise they were more likely to focus on the task and less likely to connect to each other. They also suggested as they were working on their own individual projects they were less likely to connect to each other; there would have to be more of a common purpose.

### Action research cycle 2. 25 min time constraint

Some students perceived they connected to each other during the 25 min time constraint, they mostly felt they connected to the task. The students said because they were all researching individually on their mobile phones this disconnected them from each other.

### Action research cycle 3 25 min time constraint, ‘Safe emergency’

There is an indication from the research that the students connected to each other when the lecturers were not there and they had to figure it out for themselves.  During the final action, the ‘safe emergency’ students had to work together to gain an understanding of the brief and the client they would be designing for.

## Discussion

A time constraint may be one factor in the design of a class plan that considers student connectedness. Other factors such as common purpose (Mc Millan and Chavis, 1986) and

not individually researching with mobile phones as the students perceived this to disconnect them from each other. (Connectedness V Connectivity, faculty focus group)

The students viewed a time constraint as a factor in connecting to the task. Students felt the time constraint taught them time management, helped them focus on the task and sometimes encouraged them to work together to complete the task.

The students also pointed to learning styles being an obstacle to connection when working as part of a team.

Although it's still not clear as to the relationship between time constraints and student connectedness, it's the start of a process that will require many more iterations of the cycle to develop a deeper understanding of the subject under investigation. The process unveiled many potential factors that may come together in the design of a classroom strategy that answers the question how and why do students connect to each other during team exercises?

It may not have been the 'time constraint' or the 'safe emergency' but the 'novelty' of the approach to the class or the fact that they were "relaxed and excited" about their final project. It may have been a combination of all these things or none of them.

**Action research**

The process assisted in examining more closely individual students, I found that individual learning style had a bearing on connectedness during team work as did the student's belief system as students perceived each other's different perspectives both as a positive and a negative. Some students are more individualistic than collaborative in nature and this can be cultural. The process gave them the experience of contributing to the class and their own learning as well as perhaps an understanding of how they themselves learned. Executing the reflective piece and answering the surveys facilitating in their own reflection. Improving the learning environment and teaching strategies.

Becoming a reflective practitioner has peeled away some of the layers of assumption and preconception and sharpened my observational skills. There was an initial resistance to being open to the experience and a hesitation to action. *"What is this hesitation to action? It is action research!!"* (Conversation with colleague in the corridors, Dec, 2015) I was struggling with artist v academic, the gap between theory and practice and the subject of connectedness itself, I wasn't talking about measuring rocks. I was at the time also trying to understand the action research methodology knowing on one level we do it every day in the classroom, so what was the difficulty?  After placing the action research methodology closer

to my art college experience than my academic experiences I got comfortable with the process.

“I’ve read literature on ‘connectedness’ but these issues make more sense to me when ‘seeing’ and ‘feeling’ them via art or music.” (Communication with supervisor 0/01/16)

I found the action research process exiting; it created a much more inclusive and enjoyable atmosphere in the classroom. It was beneficial to all involved and I felt it was more similar to a real life work environment. We were all in it together for collective improvement, we had a common purpose. (McMillan and Chavis, 1986)

I was surprised at how supportive everyone in the design faculty was and how ‘on board’ with the process they were. The students were interested in the research and happy to give their views on my teaching practice and how we could improve the classroom experience. It was also interesting how they challenged each other’s views during class discussions.

During one studio class we came to the realisation that the students were being over assessed through the overlapping of the studio module and the design principles module; as a class working together we solved the problem, we modified the brief in class and uploaded it to Moodle.

During another class the students drew my attention to a problem with the schedule. They were going on a trip to the National gallery and would not make it back in time for their analytical drawing class. I asked them how they would solve this problem; there was a class discussion and they thought it would be best to have the analytical drawing class somewhere other than in the classroom, somewhere nearer to the National Gallery. I rang a friend who is in the restaurant business to see if he had any ideas as to where we could have the class; he suggested Starbucks on Stephens Green. So we had our first analytical drawing class in Starbucks on Stephens Green.

“…. we’re probably talking about the next generation who as you say live in the laptop, it could be Starbucks around them, it could be UCD, it could be anything around them” (Focus group comment)

**Recommendations**

1. A deeper investigation into the relationship between time constraints and student connection in the classroom.
2. A deeper investigation into how creating the optimum level of tension in the classroom can connect students to each other and to the task.

3. A study over a longer period of time layering one time frame into a class plan and investigating how this informs the student understanding of that time frame.
4. Further research through a community of practice investigating how and why students connect to each other during team exercises.
5. An investigation into why first year Art and Design students have a higher progression rate.

“We picked our team so I thought it would be easy, but working with your friends, you play so much and you run out of time.”

This comment stuck with me, it made me consider the perception of time when in the difficulty of learning a task and the perception of time when in the easy company of friends. What is the relationship between the two?

**Cycle 4**

My self and another studio tutor met to discuss the ‘steikheif Entweruf’ in the café across the road (Wednesday 16/03/16 12.30) We discussed the idea of ritualising a set time into a class plan so the students understand what 25 mins is and how much they can do in 25 mins.

We as lecturers assume everyone perceives time in the same way, in reality if a student has not done something before how can they know how long it is going to take?

**Plan:** To investigate the 25 min time constraint during team projects over a longer period of time with another studio lecturer. This could be a way of all involved gaining an understanding of what can be done in 25 mins and how this changes as we master a task. This uses the ritual effect experienced during ‘social science Wednesday’. It may also synchronise the perception of time for students and teachers within the classroom.

# REFERENCES


Adams, J. (2012). Collaborations: The rise of research networks. Nature, 490(7420), pp. 335-336.

Adelman, C., 1993. Kurt Lewin and the origins of action research. Educational action research, 1(1), pp.7-24.

Argyris, C., 1993. Knowledge for action: A guide to overcoming barriers to organizational change. Jossey-Bass Inc., Publishers, 350 Sansome Street, San Francisco, CA 94104.

Arnett, J.J., 2000. Emerging adulthood: A theory of development from the late teens through the twenties. American psychologist, 55(5), p.469.

Baird, K., 2002. An Inquiry into Withdrawal from College, a study conducted At Trinity College Dublin by the Research Team, Student Counselling Service. Dublin, Trinity College.

Bandura, A., 1969. Social-learning theory of identificatory processes. Handbook of socialization theory and research, 213, p.262.

Barber, B.K. and Schluterman, J.M., 2008. Connectedness in the lives of children and adolescents: A call for greater conceptual clarity.Journal of Adolescent Health, 43(3), pp.209-216.

Bartunek, J.M. and Louis, M.R., 1996. Insider/outsider team research. Thousand Oaks, CA: Sage Publications.

Baumeister, R.F. and Leary, M.R., 1995. The need to belong: desire for interpersonal attachments as a fundamental human motivation. Psychological bulletin, 117(3), p.497.

BBC News. (2016). Starlings: Mapping and modelling the ballet of the skies – BBC News. [online] Available at: http://www.bbc.com/news/science-environment-29599792 [Accessed 26 February 2016]

Bean, J.P., 2005. Nine themes of college student retention. College student retention: Formula for student success, pp.215-243.

Blaney, C. and Mulkeen, S. (2008) Student retention in a modular world. A Study of Retention UCD Entrants 1999-2007. Available at:

http://www.ucd.ie/t4cms/student%20retention%20in%20a%20modular%20world.pdf Accessed: 09/03/2015)

Blakemore, S.J., 2012. Development of the social brain in adolescence. Journal of the Royal Society of Medicine, 105(3), pp.111-116. Available at: https://www.ted.com/talks/sarah_jayne_blakemore_the_mysterious_workings_of_the_adolescent_brain?language=en (Accessed: 03/03/2016)

Bolliger, D.U. and Inan, F.A., 2012. Development and validation of the online student connectedness survey (OSCS). The International Review of Research in Open and Distributed Learning, 13(3), pp.41-65.

Bourdieu, P., 1986. The forms of capital Handbook of theory and research for the sociology of education (pp. 241–258).

Bourdieu, P. and Passeron, J.C., 1990. Reproduction in education, society and culture (Vol. 4). Sage.

Bowlby, J., 1969. Attachment (Attachment and loss series, Vol. 1). New York.

Bowles, S. and Gintis, H., 2002. Schooling in capitalist America revisited. Sociology of education, pp.1-18.

Braxton, J.M., Jones, W.A., Hirschy, A.S. and Hartley III, H.V., 2008. The role of active learning in college student persistence. New Directions for Teaching and Learning, 2008(115), pp.71-83.

Brooker, L., 2008. Supporting transitions in the early years. McGraw-Hill Education (UK).

Brown, B., 2010. The gifts of imperfection: Let go of who you think you're supposed to be and embrace who you are. Hazelden Publishing.

Bruner, E.M., 1961. Urbanization and ethnic identity in North Sumatra. American Anthropologist, 63(3), pp.508-521.

Brydon-Miller, M., Greenwood, D. and Maguire, P., 2003. Why action research?. Action research, 1(1), pp.9-28.

Burr, V., 2015. Social constructionism. Routledge.

Cacioppo, J.T. and Patrick, W., 2008. Loneliness: Human nature and the need for social connection. WW Norton & Company.

Cork institute of Technology Available at: http://www.cit.ie (Accessed 14/03/2015)

Coghlan, D. and Brannick, T., 2003. Kurt Lewin: The" Practical Theorist" for the 21st Century. Irish Journal of Management, 24(2), p.31.

Cohen, S. and Wills, T.A., 1985. Stress, social support, and the buffering hypothesis. Psychological bulletin, 98(2), p.310.

Cozolino, L. and Sprokay, S., 2006. Neuroscience and adult learning. New Directions for Adult and Continuing Education, 2006(110), pp. 11-19.

Cozolino, L., 2014. The Neuroscience of Human Relationships: Attachment and the Developing Social Brain (Norton Series on Interpersonal Neurobiology). WW Norton & Company.

Creswell, J.W., Plano Clark, V.L., Gutmann, M.L. and Hanson, W.E., 2003. Advanced mixed methods research designs. Handbook of mixed methods in social and behavioral research, pp.209-240.

Creswell, J.W., 2013. Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications.

Dawson, S., 2008. A Study of the Relationship between Student Social Networks and Sense of Community. Educational Technology & Society,11(3), pp.224-238.

Day, C., 1999. Developing teachers: The challenges of lifelong learning. Psychology Press.

Deci, E.L., Vallerand, R.J., Pelletier, L.G. and Ryan, R.M., 1991. Motivation and education: The self-determination perspective. Educational psychologist, 26(3-4), pp.325-346.

Dick, B., 2002. Action research: action research. Available at: http://www.aral.com.au/ [Accessed 8 December 2015]

Dublin institute of Technology Available at: http://www.dit.ie [Accessed 15 March 2015]

Duhigg, C. (2016). What Google Learned From Its Quest to Build the Perfect Team. [online] Nytimes.com. Available at: http://www.nytimes.com/2016/02/28/magazine/what-google-learned-from-its-quest-to-build-the-perfect-team.html [Accessed 2 March 2016]

Dweck, C., 2012. *Mindset: How you can fulfil your potential.* Hachette UK.

Edmondson, A., 1999. Psychological safety and learning behavior in work teams. Administrative science quarterly, 44(2), pp.350-383.

European Commission, 2001 Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52001DC0678 (Accessed on: 07/03/2015)

Ferrance, E., 2000. Action research. LAB, Northeast and Island Regional Education Laboratory at Brown University.

Fleming, T. (June, 2011). 'The struggle for recognition in Hegel, Honneth and Higher Education: What non-traditional students say?' Paper presented at C.A.V.E Conference on Building in the Contemporary University, Trinity College Dublin.

Flood, R.L., 2010. The relationship of 'systems thinking' to action research. Systemic Practice and Action Research, 23(4), pp.269-284.

Fortune, A.E., Reid, W.J. and Miller, R.L., 2013.Qualitative research in social work. Columbia University Press.

Fredrickson, B.L., 2001. The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. American psychologist, 56(3), p.218.

Futurism. (2015). Precursor to Mind-Reading Technology, Researchers Reconstruct Sentences From Decoded Brain Activity. [online] Available at: http://futurism.com/precursor-to-mind-reading-technology-researchers-reconstruct-sentences-from-decoded-brain-activity/ [Accessed 3 March 2016].

Giroux, H.A. and Penna, A.N., 1979. Social education in the classroom: The dynamics of the hidden curriculum. Theory & Research in Social Education, 7(1), pp.21-42.

Glaser, H. and Bingham, S., 2012. Students' perceptions of their connectedness in the community college basic public speaking course. Journal of the Scholarship of Teaching and Learning, 9(2), pp.57-69.

Goodman, B., Soller, A., Linton, F. and Gaimari, R., 1997. Encouraging student reflection and articulation using a learning companion. InProceedings of the AI-ED 97 World Conference on Artificial Intelligence in Education (pp. 151-158).

Levin, M. and Martin, A.W., 2007. The praxis of educating action researchers The possibilities and obstacles in higher education. *Action Research, 5(3),* pp.219-229.

Levin, M. and Greenwood, D., 2001. Pragmatic action research and the struggle to transform universities into learning communities. Handbook of action research, pp.103-113.

Guba, E.G. and Lincoln, Y.S., 1994. Competing paradigms in qualitative research. Handbook of qualitative research, 2(163-194).

Heidegger, M, 1996. Being and time: A translation of Sein und Zeit. SUNY Press.

Hammond, M. and Wellington, J.J., 2012.Research methods: The key concepts. Routledge.

Harris, J.R., 2011. The nurture assumption: Why children turn out the way they do. Simon and Schuster.

Higher Education Academy Available at: http://www.hea.ac.uk (Accessed: 15/03/2015)

Higher Education Authority Available at: http://www.hea.ie/ (Accessed: 15/03/2015)

Immablog.org. (2016). What we call love / IMMA BLOG. [online] Available at: http://immablog.org/tag/what-we-call-love/ [Accessed 1 March 2016]

Mooney, O., Patterson, V., O'Connor, M. and Chantler, A., 2010. A study of progression in Irish higher education. Available at: http://www.hea.ie/sites/default/files/study_of_progression_in_irish_higher_education_2010.pdf (Accessed: 04/03/2015)

Hendel, R., Oughton, K., Pickthorn, T., Schilling, M. and Versiglia, G., 2011. The Neuroscience of Learning: A New Paradigm for Corporate Education.

Hendrickson, B., Rosen, D. and Aune, R.K., 2011. An analysis of friendship networks, social connectedness, homesickness, and satisfaction levels of international students. International Journal of Intercultural Relations, 35(3), pp.281-295.

Joiner, T., 2007. *Why people die by suicide.* Harvard University Press.

Jordan, S. and Kapoor, D., 2015. Re-politicizing participatory action research: unmasking neoliberalism and the illusions of participation. *Educational Action research*, pp.1-16.

Kahne, J., King, S.H. and Westheimer, J., 1996. Visions of community and education in a diverse society. Harvard Educational Review, 66(4), p.843. Available at http://hepg.org/her-home/issues/harvard-educational-review-volume-66-issue-4/herarticle/_251 (Accessed on: 24/03/2016)

Kenny, M.E. and Donaldson, G.A., 1991. Contributions of parental attachment and family structure to the social and psychological functioning of first-year college students. Journal of Counseling Psychology, 38(4), p.479.

Kitayama, S. and Cohen, D. eds., 2010. Handbook of cultural psychology. Guilford Press.

Kok, B.E., Coffey, K.A., Cohn, M.A., Catalino, L.I., Vacharkulksemsuk, T., Algoe, S.B., Brantley, M. and Fredrickson, B.L., 2013. How positive emotions build physical health perceived positive social connections account for the upward spiral between positive emotions and vagal tone.Psychological science, 24(7), pp.1123-1132.

Konig, R., 1968. Community.

Kuh, G.D., Kinzie, J., Buckley, J.A., Bridges, B.K. and Hayek, J.C., 2006, July. What matters to student success: A review of the literature. InCommissioned report for the national symposium on postsecondary student success: Spearheading a dialog on student success.

Landow, G.P., 2009. The industrial Revolution: A Timeline. Victorian web, 23.http://www.victorianweb.org/technology/ir/irchron.html (Accessed: 02/03/2016)

Lewin, K., 1946. Action research and minority problems. Journal of social issues, 2(4), pp.34-46.

Libbey, H.P., 2004. Measuring student relationships to school: Attachment, bonding, connectedness, and engagement. The Journal of school health, 74(7), p.274.

Linehan, M. (2008). Work Based Learning-Graduating Through The Workplace.

Jon Lieff, M.D. (2012). *Rapidly Changing Neuron, Axons, Dendrites, Synapses / Jon Lieff, M.D* [online] Available at: http://jonlieffmd.com/blog/neural-plasticity-blog/the-busy-neuron [Accessed 3 march 2016]

Lizzio, A., 2006. Designing an orientation and transition strategy for commencing students. A conceptual summary of research and practice. First Year Experience Project. Brisbane, Australia: Griffith University.

Maslow, A.H., 1943. A theory of human motivation. Psychological review, 50(4), p.370.

McMillan, D.W. and Chavis, D.M., 1986. Sense of community: A definition and theory. Journal of community psychology, 14(1), pp.6-23.

Mettetal, G., 2012. The what, why and how of classroom action research. Journal of the Scholarship of teaching and Learning, 2(1), pp.6-13.

MCNEELY, C., Whitlock, J. and Libbey, H., 2009. School connectedness and adolescent well being.Handbook on School-Family Partnerships, pp.266-86.

McNeely, C.A., Nonnemaker, J.M. and Blum, R.W., 2002. Promoting school connectedness: Evidence from the national longitudinal study of adolescent health. Journal of school health, 72(4), pp.138-146.

McNiff, J., 2014. Writing and Doing Action Research. SAGE.

McTaggart, R. and Kemmis, S. eds., 1988. The action research planner. Deakin university.

My Modern Met. (2012). Measuring the universe. [online] Available at: http://www.mymodernmet.com/profiles/blogs/roman-ondak-measuring-the-universe [Accessed 5 may 2016] [Accessed 12 March 2016]

National Forum Focused Research report (No.6) 2015. Transition from Second Level and Further Education to Higher Education. Available at: http://www.teachingandlearning.ie/wp-content/uploads/2015/08/Research-Report-6-Transitions-from-Second-Level-FE-to-Higher-Education.pdf [Accessed 12 March 2016]

National Forum Focused Research report (No.4) 2015. Why Students Leave: Findings from Qualitative Research into Student Non-Completion in Higher Education in Ireland. Available at: http://www.teachingandlearning.ie/wp-content/uploads/2015/07/Project-4.pdf [Accessed 12 March 2016]

Nisbet, R.A., Perrin, R.G. and Page, C.H., 1977. The social bond. Alfred A. Knopf.

Nonaka, I. and Konno, N., 1998. The concept of" ba": Building a foundation for knowledge creation. California management review, 40(3), pp.40-54.

Nytimes.com. (2016). Google Redirect China Users to Uncensor Site – NYTimes.com. [online] Available at: http://www.nytimes.com/2010/03/23/technology/23google.html?_r=0 [Accessed 5 May 2016]

Oblinger, D.G., 2006. Space as a change agent. Learning spaces, 1.

O'Brien, R., 1998. An overview of the methodological approach of action research. Faculty of Information Studies, University of Toronto.

O'Donnell, O. and Boyle, R., 2003. Understanding and managing organisational culture.

OECD (2014), "How many young people graduate from tertiary education?" in *Education at a Glance 2014: Highlights*, OECD Publishing. Available at: http://dx.doi.org/10.1787/eag_highlights-2014-10-en (Accessed: 14/03/2015)

OECD 1996 The Knowledge Based Economy Available at: https://www.oecd.org/sti/sci-tech/1913021.pdf (Accessed: 15/03/2015)

O'Rawe, M., 2015. Curriculum, Classroom, Culture and Connectedness.

Park, G. and Thayer, J.F., 2014. From the heart to the mind: cardiac vagal tone modulates top-down and bottom-up visual perception and attention to emotional stimuli. Front. Psychol, 5(278), pp.10-3389.

Pearce, D.J. and Turner, M.S., 2014. Density regulation in strictly metric-free swarms. New Journal of Physics, 16(8), p.082002. Viewed 28 March 2016 http://www.bbc.com/news/science-environment-29599792

Peirce, C.S., 1878. How to make our ideas clear.

Popplewell, R. and Hayman, R., 2012. Where, how and why are action research approaches used by international development non-governmental organisations. Briefing Paper, 32.

Porges, S.W., Doussard- Roosevelt, J.A. and Maiti, A.K., 1994. Vagal tone and the physiological regulation of emotion. Monographs of the Society for Research in Child Development, 59(2- 3), pp.167-186.

Reason, P. and Bradbury, H. eds., 2001.Handbook of action research: Participative inquiry and practice. Sage.

Redmond, B., Quin, S., Devitt, C. and Archbold, J. (2011) A qualitative investigation into the reasons why students exit from the first year of their programme and UCD.

Rettie, R., 2003. Connectedness, awareness and social presence.

Roberts, J. and Styron, R., 2010. Student satisfaction and persistence: Factors vital to student retention. Research in Higher Education Journal, 6(3), pp.1-18.

Rohlin, M., Petersson, K., & Svensäter, G. (1998). The Malmö model: a problem- based

Rovai, A.P., 2002. Building sense of community at a distance. The International Review of Research in Open and Distributed Learning, 3(1).

Rovai, A.P., 2002. Development of an instrument to measure classroom community. The Internet and Higher Education, 5(3), pp.197-211.

Sarason, S.B., 1974. The psychological sense of community: Prospects for a community psychology. Jossey-Bass.

Sarason, I.G., Sarason, B.R., Shearin, E.N. and Pierce, G.R., 1987. A brief measure of social support: Practical and theoretical implications.Journal of social and personal relationships, 4(4), pp.497-510.

Schön, D.A., 1983. The reflective practitioner: How professionals think in action (Vol. 5126). Basic books.

Schön, D.A., 1987. Educating the reflective practitioner: Toward a new design for teaching and learning in the professions. San Francisco.

Schön, D.A., 1995. Knowing-in-action: The new scholarship requires a new epistemology. Change: The Magazine of Higher Learning, 27(6), pp.27-34.

Sergiovanni, T.J., 1999. Refocusing Leadership to Build Community. High School Magazine, 7(1), pp.10-15.

Siemens, G., 2005. Connectivism: Learning as network-creation. ASTD Learning News, 10(1).

Slideshare.net. (2010). Action Research Dissertation presentation. [online] Available at: http://www.slideshare.net/dkrell1530/action-research-dissertation-presentation [Accessed 15 November 2015]

Stenhouse, L., 1979. Research as a basis for teaching: Inaugural lecture, University of East Anglia, February 1979. L. Stenhouse (1983) Authority, Education and Emancipation. London: Heinemann Books.

Stringer, E.T., 2013. Action research. Sage Publications.

Styron Jr, R., 2010. Student satisfaction and persistence: Factors vital to student retention. Research in Higher Education Journal, 6, p.1.

Sullivan, A., 2002. Bourdieu and education: how useful is Bourdieu's theory for researchers?. Netherlands Journal of Social Sciences, 38(2), pp.144-166.

Terebess.hu. (2016) Nakahara Nantenbo (1839-1925) Toju Zenchu. [online] Available at: http://terebess.hu/zen/mesterek/Nantembo.html enso [Accessed 7 march 2016]

Tinto, V. (1975). Dropout from Higher Education: A Theoretical Synthesis of Recent Research. Review of Educational Research, Vol. 45, No. 1 (Winter, 1975), pp. 89-125Published by: American Educational Research Association. Available at: http://www.jstor.org/stable/1170024 (Accessed: 15/03/2015)

Tinto, V., 1993. Building Community. Liberal Education, 79(4), pp.16-21.

Tinto, V. (2004). Student Retention and Graduation. Facing the Truth, living with the consequences.

Tinto, V., 2012. Enhancing student success: Taking the classroom success seriously. The International Journal of the First Year in Higher Education, 3(1), p.1.

Triandis, H.C., Bontempo, R., Villareal, M.J., Asai, M. and Lucca, N., 1988. Individualism and collectivism: Cross-cultural perspectives on self-ingroup relationships. Journal of personality and Social Psychology, 54(2), p.323.

Townsend, K.C. and McWhirter, B.T., 2005. Connectedness: A review of the literature with implications for counseling, assessment, and research. Journal of Counseling and Development: JCD, 83(2), p.191.

Vygotsky, L.S., 1934. Myshlenie i rech. Psikhologicheskie issledovanija.

Whitlock, J., Wyman, P.A. and Barreira, P., 2010. Connectedness and suicide prevention in college settings: Directions and implications for practice. Unpublished manuscript, Cornell University.

Whitlock, J., Wyman, P.A. and Moore, S.R., 2014. Connectedness and suicide prevention in adolescents: Pathways and implications. Suicide and life-threatening behavior, 44(3), pp.246-272.

Whittaker, S.S., 2008. Investigation of social connectedness in a college population and its relationship to perceived stress and health symptoms.

World Health Organisation. (2016). Adolescent health. [online] Available at: http://www.who.int/topics/adolescent_health/en/ [Accessed 4 May 2016]

http://www.mindmatters.edu.au/docs/default-source/learning-module-documents/mm-module1-4_simplesteps_v2F7F5E2C234ED.pdf?sfvrsn=0

Von Krogh, G., Ichijo, K. and Nonaka, I., 2000.Enabling knowledge creation: How to unlock the mystery of tacit knowledge and release the power of innovation. Oxford university press.

Yorke, M. and Longden, B. (2004) *Retention and student success in higher education*. Maidenhead: Society for Research into Higher Education and Open University Press.

Yorke, M. (2004). Retention, persistence and success in on-campus higher education, and their enhancement in open and distance learning. *Open Learning*, 19(1), 19-32.

Yorke, M. and Longdon, B. (2008). The first-year experience of higher education in the UK. York: The Higher Education Academy. Available at: http://jisctechdis.ac.uk/assets/documents/archive/FYEFinalReport.pdf [Accessed: 16 March 2015]

Youcubed at Stanford University. (2016). *Mistakes Grow Your Brain.* [online] Available at: https://www.youcubed.org/think-it-up/mistakes-grow-brain/ [Accessed 1 February 2016]

# APPENDICES

## A. The students in the first year design classroom

| GENDER | AGE | CATEGORY | NATIONALITY | CAMPUS | ENGLISH/OTHER |
|---|---|---|---|---|---|
| F | 24 | Non-EU | Hong Kong | Dublin | English support |
| F | 18 | Irish | Irish | Dublin | Exempt/dyslexic |
| F | 25 | Non-EU | Chinese | Dublin | English support |
| M | 19 | Non-EU | Indonesian | Dublin | Exempt |
| F | 18 | Irish | Irish/American | Dublin | Exempt |
| F | 19 | Irish | Polish | Dublin | Exempt |
| M | 20 | Non-EU | Egyptian | Dublin | Exempt |
| M | 18 | Non-EU | Egyptian | Dublin | Exempt |
| F | 20 | Irish | Irish/Mongolian | Dublin | Exempt |
| F | 18 | Irish | Irish/Nigerian | Dublin | Exempt |
| M | 22 | Irish | Angolan | Dublin | Exempt |
| F | 18 | Irish | Canadian | Dublin | Exempt |
| M | 18 | Irish | Irish | Dublin | Exempt |
| F | 20 | Non-EU | Korean | Dublin | Exempt |
| F | 20 | Non-EU | Vietnamese | Dublin | English support |
| F | 19 | Non-EU | Malaysian | Dublin | Exempt |
| F | 18 | Irish | Irish | Dublin | Exempt |
| F | 18 | Irish | Romanian | Dublin | Exempt |
| F | 19 | Irish | Irish | Dublin | Exempt |

| | | | | | |
|---|---|---|---|---|---|
| F | 26 | Irish | Irish/South A. | Dublin | Exempt/dyslexic |
| F | 23 | Non-EU | Brazilian | Dublin | Exempt |
| M | 19 | Irish | Irish | Dublin | Exempt |
| F | 19 | Irish | Irish | Dublin | Exempt |
| F | 22 | Irish | Irish | Dublin | Exempt |

## B. When was the research conducted?

| Research time line | | |
|---|---|---|
| **What** | **When** | **Who** |
| **Informal discussions** | **1/11/15-** | **Who ever** |
| **Reflective journal** | **1/11/15-** | **My Thoughts and observations** |
| **Faculty focus group** | **25/01/16** | **Myself and 5 faculty members** |
| **Student reflective piece** | **01/01/16** | **Students** |
| **Cycle 1** | **10/01/16** | **Myself, studio tutor M and the students** |
| **Cycle 2** | **17/01/16** | **Myself, studio tutor M and the students** |
| **Cycle 3** | **24/01/16** | **Myself, studio tutor M and the students** |

## C. The nature of knowledge

In conducting a research activity, the researcher attempts to build knowledge. But what is knowledge? The nature of knowledge is central to the discipline of Philosophy. The term epistemology was coined in the "mid-19th century by J.F. Ferrier. It originates from the Greek episteme meaning 'knowledge', from epistasthai 'know, know how to do.'" (Oxford dictionary)

When engaging in social science research Creswell (2003) underscores the importance of stating a knowledge claim to establish how knowledge will be gained and what knowledge will be gained through the enquiry. Creswell (2003) further suggests within this knowledge claim the researcher takes a stance on the nature of knowledge (ontology) and identifies sources and limitations of the knowledge or how she comes to know the knowledge (epistemology) in contrast to what she believes to be true (doxology). She will ascertain what ethics and values are embedded in the knowledge (axiology) and what processes will be used to study the knowledge (methodologies) and how this knowledge will be gathered (methods). Finally, the researcher will write about the knowledge (rhetoric). So what are these belief systems? And which of these belief system influences the researcher. (Gubu and Lincoln, 1994 p. 105) see paradigm defined as "the basic belief system or world view that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways."

However Stringer (2013) holds a critical view of this traditional approach and sees "the future of educational research" moving away from the restrictive rules that govern conventional research, he argues that within the context of "Human enquiry"…"there is no tangible reality (p. xx)" therefor the wall of separation between ontology (the nature of knowledge) and epistemology (how one comes to know the knowledge) disintegrate as knowledge is co-constructed through the act of the enquiry and so "conventional criteria do not fit (p.x)."

Transition :(Paradigm, world view, belief system – basically the same thing, but for the purpose of this research the term 'belief system' is used)

**BELIEF SYSTEMS**

Creswell (2013) identifies four main world views or belief systems, Post-positivist, Advocacy/participatory, Pragmatist and Interpretivist.

### Positivist and Post positivist

The objective of the positivist/post-positivist belief system is to predict.

Positivism is based on the premise that knowledge exists as reality, is absolute and can be found and measured. Post positivist meaning thinking after positivism where absolute knowledge is challenged and states that causes probably govern effects or outcomes and absolute truth cannot be located. Post-positivism is most often associated with quantitative methods. It can be referred to as the scientific method and is commonly applied in the physical sciences (Creswell, 2013).

### Advocacy/Participatory

The main concern of the Advocacy/Participatory belief system is to emancipate.

This belief system advocate's research is interlocked with political agenda empowering participants to unlock themselves from unjust structures. It is collaborative and the research aims at achieving "a united voice for reform and change" (Creswell, 2013, p.9). The advocacy/participatory belief system often uses participatory Action research as method.

### Interpretivist

The main interest of the interpretivist belief system is to understand.

The interpretivist belief system acknowledges its place in time and history as defining the complexity of human interactions within any given context. This belief system recognises the researcher's formative journey as affecting their world view.

One of the key features of interpretivist belief system is the interaction between researchers and participants and the lack of separation between researcher and Participants-Creswell (2003) siting Crotty (1998) alludes to the interpretivist paradigm assuming the creation "…of meaning is always social, arising in and out of interaction with a human community" (p. 9). The interpretivist belief system is associated with qualitative methods.

### Pragmatist

The pragmatist belief system is concerned with action and change.

Pragmatism links theory and practice (Greenwood and Levin HQR p. 53) through deliberate action designed to effect change. "Knowledge through action and experimentation in context, and participatory democracy as both a method and a goal." (HQR p.53) Knowledge

is viewed as being both constructed and based on the reality of the world experienced and lived in.

The pragmatist approach is less focused on methods but uses “all approaches available to understand the problem” (Creswell, 2013. P.10) in a ‘whatever works approach.’

The aim of the research is to gain a deeper understanding of how I can change my teaching practice to investigate how and why students connect to each other in a design studio classroom. The Interpretivist belief system acknowledges meaning as co-created through human interaction.

This research attempts to cultivate an understanding of the link between the active curriculum and the social processes at work in the class. The pragmatist belief system attempts to “Generate knowledge through action and experimentation in context…” (Greenwood and Levin, P.53)

The interpretivist (social constructivist) and pragmatist belief systems are accepted for the initial steps in this action research process. Action research is not confined to any particular belief system and the cycles of the process may open different realities as they revolve.

Action Research is not a methodology but a paradigm which offers a “conceptual, social, philosophical and cultural framework for doing research” and as such encompasses various methodologies. (Reason & Bradbury 2001, Coughlan 2002)

## D. Brief history of Action research

Some consider Action research to have originated in the early work of Kurt Lewin at Cornel University and MIT in the 1940’s (Adelman, 1993, O’ Brien, 1998, Mc Niff, 2014) coining the term in his 1946 paper “Action research and minority problems” (Lewin, 1946). He developed the central process that forms the methodological foundation for the majority of Action Research processes today (Poppelwell and Hayman, 2012). Lewin is believed to have been influenced by the German physician and social philosopher Jacob L. Moreno who felt social science research would be better conducted if the researcher and participants acted as equals collectively engaged in the process of solving social problems (Mc Niff, 2014). At the time, John Dewey’s criticism of the separation between theory and practice is considered to have been an important element in formalising of the new approach of AR. (Aldeman, 1993)

Many have contributed to the evolution of action research in the post war era since it was first developed by Lewin. Some influential thinkers include Trist, Lippitt, Dewey and Friere. It

was in 1975 that Sternhouse alluding to the idea of teacher as researcher identified the importance of the role of reflective practice in the process of action research. (cite)

The action research process has been evolving over time in many disciplines such as: medicine, Education, Organisation, Psychology, Social policy, Community development and international development to name a few. (Poppelwell and Hayman, 2012).

## E. Values inherent in the socially constructed classroom

Although social constructivism and constructivism are similar, social constructivism places greater emphasis on social interaction. The students in the first year design group are culturally diverse with more than half being international students. Vygotsky (1934) and Bruner (1961) stress the fundamental role of sociocultural interaction in cognitive development.

Social constructivism acknowledges the student's prior knowledge as influencing their learning process. Although the students in the class will have a similar learning experience each student will construct their learning in a way that is personal to them subject to their own individuality. As students co-learn they may encounter conceptual changes and may initially accept or reject this new knowledge. This pluralistic approach accepts diversity in any given context. (P. 87 HQR)

The socially constructed classroom is a departure from the transmission style of teaching where the teacher transmits their knowledge to teacher as a facilitator where all engaged in the process co-construct knowledge in a dynamic and ever changing process. In the socially constructed class and the student, accepting more responsibility for their own learning plays an active role. There is no fixed claim of authority (Px HQR)

"The researcher embeds her own values into the constructivist approach." P.85 (researcher interrogates own positionality) Appendix A.

## F. Values inherent in the pragmatic classroom

Through procedural knowing pragmatism looks for patterns of reality within a particular context by connecting action to praxis (HQR p.184). Dewey was critical of the established separation between theory and practice as he felt that education should be grounded in the practical and experiential. (Aldeman 1993) considers Lewin to be a scientific pragmatist as

he attempted to change human systems through involving all engaged in the system throughout the process of change.

To explain the values in the pragmatic classroom I'm going to tell a story about my very first teacher by way of demonstrating the effect of one talk she gave to a class of six/seven year olds and the impact this talk had on my life, which will also go some way to explaining my own values and how these values inform my position in this research.

Miss Lawlor addressed the class, asked us to sit down and listen to her for a moment as she had something important to tell us.

She started, "I have something important to tell you but I'm not going to tell you today, I will tell you two days from now so make sure you are all in. We all speculated as to what it this was about for the two days, some were sure they knew, others had various ideas. Was it about us, was it about her, was it some impending disaster we were to be notified of, was it some reward, something we were going to be doing, there was an endless pit of possibility and it consumed us. Everyone had a different idea of what it might be.

The day came and she kept us hanging until after big break. She came into the classroom and we were all were seated and silent.

"I'm going to talk to you about the truth…" I mentally scanned through my recent activities to locate what it was that I had done that I shouldn't have, for me at that time the truth was the admission of some wrong doing.

She went on "The truth is something inside yourself that enables you to understand what's happening around you. This is your truth and it may be different to the truth of others and that's fine. Pull yourself to the truth inside you and ask yourself, what do I see? What do I feel? What do I think? What is my truth?

The talk ended with her saying "If you learn this it will give you the ability to deal with the challenging situations that life can sometimes present to you."

I took this on board and I thought about what she had said often and sure enough I would use this truth, my truth when I found myself in situations that I didn't quite understand. My truth wasn't always met with positive reactions but she had also said that my truth may be different to the truth of others so that was OK.

Truly profound learning experiences change who we are – we change through learning. All learning involves thinking and doing, action and reflection. Learning changes what we can do – it is always active – you haven't learned to walk until you can walk." –Peter Senge

## G. Advantages of Action Research

Action research can involve a variety of data collection methods (O'Brien) which may give more insight into a particular issue.

Action research can give the educator an opportunity to review their own practice as systematic reflection is not only a crucial part or AR but an effective way to learn (Schon 1983).

Action research lends itself well to work situations as the educator can work, research and facilitate change in the one environment. (Dick, B. 2002) Suggests practitioners can use action research "as part of their normal activities."

It is participatory and is more of a partnership between student and educator which encourages students to have a voice in the improvement of their own education. This may make the action research approach more "ethically satisfying." (Dick, B. 2002)

## H. Disadvantages of Action Research

The action research process may be more demanding of time as there is not only research but also making change to contend with. (Dick, B. 2002)

Action research has been criticised by positivists who question the reliability and validity of results as the findings are unique to a particular situation with a particular set of students and being context driven is context specific so the results are often not relevant to wider application (Brydon-Miller et al., 2003, Rose et al., 2015).

"Action research is a work in progress." (Brydon-Miller et al. p. 11, 2003) and may not lend itself well to the conventional format of a research project. The literature review may come after the data is gathered and interpreted (Dick, B., 2002)

## I. Participant consent form faculty focus group

**CONSENT TO PARTICIPATE IN FOCUS GROUP**

**PURPOSE**

You have been asked to participate in a focus group. The purpose of the group is to investigate student connectedness, specifically I want to gain a deeper understanding of student connectedness in a classroom context.

**CONFIDENTIALITY**

You can choose whether or not to participate in this focus group and can decide to opt out at any time. The focus group will be recorded, your responses will be anonymised and your identity will not be disclosed. All information gained from this study will be kept strictly confidential. I would ask that all responses by participants of the focus group be kept confidential.

**PROCEDURE**

The focus group will last approx. 30-45 mins. There are no right or wrong answers to the questions asked during the focus group, I want to hear each participant's unique view on the questions asked.

**CONSENT**

By signing this consent form you are indicating that you understand the information outlined above and agree to participate in this focus group.

**Participant's name:**

**Participant's signature:**

**Date:**

Please feel free to contact me at wendy.doyle@gcd.ie or 4150423 if you have any questions regarding the research itself or being part of the research.

**DEBRIEFING**

The data gathered from this focus group will be used redesign elements of the studio projects in first year, to establish the effect of these redesigned elements on student connectedness.

## J. Faculty Focus group questionnaire

**FOCUS GROUP: FACULTY MEMBERS REFLECT ON HOW THEY HAVE DESIGNED THEIR TEACHING PRACTICE TO CONSIDER STUDENT CONNECTEDNESS.**

**INTRODUCTION BY FACILITATOR:**

**CONTEXT**

I am engaged in a research project attempting to gain a deeper understanding of how and why students connect to each other during team projects.

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**PURPOSE**

You have been asked to participate in a focus group. The purpose of the group is to investigate student connectedness; specifically, I want to gain a deeper understanding of student connectedness in a classroom context.

---

**YOU WERE SELECTED BECAUSE**

You have designed and delivered programmes for first year in the Design Faculty in Griffith College.

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**Engagement Questions:**

1. When you think about student connectedness what comes to mind?
2. What do you notice about student connection in a classroom context?

**Exploration Questions:**

Has anything in particular influenced your teaching practice with regard to student connectedness?

3. In your experience how has student connectedness been effected by:

(a) Classroom layout
(b) Project design and assessment
(c) The use of social media

What strategies have you implemented to connect students?

4. How do you feel when told the literature identifies connectedness as one of the themes effecting entry-level student progression?

**Exit Questions**

5. Of all the topics discussed what do you think is the most important?
6. Suppose you could implement one strategy to affect student connectedness, what would it be and how would you do it?

7. What do you see as the biggest challenges to student connectedness?
8. Is there anything else you would like to say about how you feel about student connectedness?

## K. Faculty focus group data read

### LECTURER TO STUDENT CONNECTION

If we communicate in an authentic and generous way with the individual student when we have the opportunity to do so we are demonstrating a mode of communicating and they may learn from this.

*"…. you are taken seriously whatever you have to say…. there is no better way to engage…. if you engage with them, hopefully you nurture in them engaging back."*

### STUDENT TO STUDENT CONNECTION

Students connect to each other both supportively and competitively.

Peer learning can give the student confidence in their ability to achieve the learning when someone in a familiar world has achieved the learning.

*"Sometimes they take more from their peers."*

Peer assessment saw the students being competitive with other grading each other more severely than the tutors would. Although it did give them an understanding of how they were being graded.

*"peer assessment can work quite well…. but they can be more critical than we are."*

### COMPETITION

When it comes to grades and assessment students can be competitive. Once the grades go up they are comparing themselves.

"so they are competitive?"

"Well yeah…. I think it's a natural thing."

### COLLECTIVE

When the class operates as a collective they have access to the casual information that flows through this community and can be lifted by the group.

*"I think in the best sense; I feel…. that the more they are connected the more they have a chance to be lifted with the level of the class…. people who are not connected at all are missing out on the information that…. Meanders through the group…."*

There was also a sense of the distinction between the student world and our world.

*"Their world as opposed to ours"*

### COMMONALITY

In the new class the student is likely to connect to *"the person who understands them the most."* They will likely orientate to those who are similar.

*"Well I think it's very tribal, I think that when a group gets together, they find their own kind of peer group…. Like-minded people."*

The rationale behind having team projects early in the year is to encourage students to mix and engage with others who may have a different way of seeing things; which serves to broaden the student's outlook.

The purpose of team exercises is to *"get the students to break down their social barriers to get them to learn a little bit more from sharing the experiences of the learning processes with their peer, maybe to take them out of their comfort level but also to increase their learning."*

### INDUSTRY

Industry expects the students to be ready for cross time zone, cross cultural and cross discipline collaboration.

*"….. when they get out into industry…. they're going to have to collaborate, they're going to have to work with various diverse groups."*

### AUTONOMY AND GROUP

The participants offered interesting approaches to teaching practice when considering student connectedness in terms of the individual and the group. One strategy saw students working as a team for the research part of the project then branching off to complete the project individually.

*"There final brief, six weeks later was far stronger when they had worked as a group….and they were all exhausted [during the teamwork [."*

Another participant discussed a teaching strategy where the individual student projects came together as a whole. The students all designed the interior of a building which was part of a street.

*"They were all working on individual projects but they could see the relationship of all those individual projects to one over all…."*

## SPACE

There was an interesting discussion as to whether space really mattered in terms of student connectedness. One participant perceived space relative to ownership and one perceived the segregation of space relative to hierarchy.

*"Their own space." "own their space."*

*"I personally feel it would be better to have more of circle dynamic so that there isn't …. that kind of hierarchy……segregatedness…."*

Another participant suggested the students should effect change in their space and they would find their own answer.

*"Ask them to effect change in their own space…. real world…. then you might see they might find the answer."*

An interesting thread in the conversation was the difference between connectedness and connectivity and one participant made reference to *"a safe space"* away from technology as if technology was a threat to connectedness. Others in the group felt the students were more interested in *"personalising themselves digitally"* and another perspective suggested *"It might be shifting…we're probably talking about the next generation who as you say live in the laptop, it could be anything around them….it could be Starbucks around them…."*

## STUDENT TIME IN LIFE

One participant took a position of empathy with the student and discussed her own experience of being a young student, at a time in her life when she was unsure of herself and afraid to fail

*"I would never want to go back between seventeen and eighteen…."*

*"Because you're unsure of yourself and you don't really have the experience, you know and you're afraid to fail, most of us are afraid to fail, no one wants to be bad at anything."*

## TIME

There were many references to time throughout the focus group discussion and the idea that the students are from a different time to us and that their world and our world are two different places. Many of these comments came as answers to the question of classroom space or the question about teaching strategy.

*"…a lot of our problems with students are that they spend too much time day dreaming…"*

*"…you were forced to do a design or project in six hours…" [Teaching practice]*

*"…in their own time rather than having to force them…" [Reference to students owning their space]*

*"I wonder if that is almost past, if these new students…live in their laptops…" [Reference to students owning their space]*

*"I think it's probably a thing of the past…" [Reference to students owning their space]*

*"…they had to go out quickly and research four different trends..." [Teaching practice]*

*"Their attention span is different….so I think it's a challenge to teach people in that mode."*

Two of the teaching strategies designed to encourage connectedness used a time constraint and successfully met the learning outcomes. One of these strategies is discussed in the 'Autonomy and group' section and the other 'Steikheif Entwurf' is discussed below.

One participants, originally from Germany discussed a teaching strategy that he experienced in college. The students were obliged to complete a group project as part of their yearly learning. This project involved a combination of students from all years. The college didn't make a big deal about it in terms of assessment. This group of students would have to complete a design project within six hours. The students had to connect to resolve the brief.

> *"In that group you have to be pretty much connected, so within the six hours you have to find your leader, supporter, all the roles, you have to find your social standing in the group, then design… together…. learn to collaborate."*

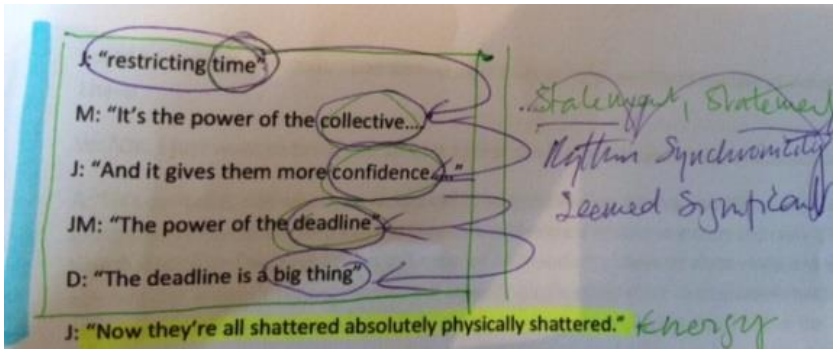
This particular technique suggests a time restriction as having an impact on connection or forcing connection, in that the project will not be completed if the group members do not connect. It is a way of closely simulating a real life situation.

### A MOMENT OF SYNCRONISITY

There are various ways of reading data and my own positionality reflects what I see in the material. But there was a moment during the focus group when one of the tutors was talking about teaching practice with regard to connectedness and how the students had to 'quickly' get the work done as it was a requirement of the task. I wanted to clarify that the students had a time restriction so I said:

"That's you know, talking about time and almost forcing them into action".

Then this happened:




How I saw this:

4. Equal voice of participants
5. Equal short succinct response
6. Different perspectives but rhythmic and whole.

It seems that a time restriction within group work leverages the power of the collective and the power of the deadline to create a third thing – connection?

## L. Personal reflection

Being an action research novice I felt it necessary to revisit the literature on the subject as I didn't quite grasp how I was going to approach the project. I also had a sense that it would be quite revealing as my interpretation would not be easily hidden behind accepted belief systems or yes/no answers.

### Structure V connection

I was correcting the part-time students work and came across a project where there was nothing in the interior space apart from some modular units which could be arranged according to the type of event to be held in the space. I recall a studio tutor saying "as an interior designer you control a person's journey through the space" but is this really the idea? Is it not the activity that defines the spatial layout and People control the space rather than the space controlling people?

### External

It becomes clear to me in an instant the tension between a space that controls and the energy flow of communication. I sense this like a vibration; it feels stressful but exciting at the same time and I start to perceive it everywhere, particularly my environment the design faculty, how space is used to corral, locate and divide.

### Internal

I'm also aware this breakdown of preconceived structures is happening in my mind. I remember drawings of fine lines of movement punctuated with the weight of regular structure through which the lines cannot flow and am image of a person standing in a derelict building, the person is bigger than the building. This reminds me of the studio critiques in Art College where your work and your knowledge is publically deconstructed during the critique process and you are left with a demolition site in your head. Then you proceed alone to reconstruct your work and yourself.

### Negative space

Although this understanding of space is not unfamiliar I'm now perceiving it in terms of connection and drawing in the lines of energy in my mind like I would a flow chart on a plan but this is very much three dimensional and in my environment. I've always been aware of the negative space in a building and how it is through the conduits of movement, corridors, walkways etc. that things happen, we meet people by chance, the activity in negative space is less defined but I can feel it now.

### Independence and dependence

A week or so later the student initiated a conversation with studio tutor G and I about her feelings of disconnection from the class, she was clearly hurting but her cultural ability to be open enabled her to have the conversation. She talked more about her father then her class mates and how selfish and unsupportive he had been in her life and her strategies to get him to engage with her and support her. Studio tutor G said to her she couldn't change him and to try and focus on her course as she had great potential.

Being from a single parent family myself I considered her independence and drive was probably born out of necessity. I could relate to her taking on too much responsibility and having difficulty relying on others, I consciously took a back seat in this conversation as I believed the students connection with studio tutor G (supportive male) may ultimately be more beneficial for her, although at the same time being aware things are never that simple. Later in the year she said "I have problems relying on other people." I become more aware of this trait in myself.

## M. Students reflective survey

**Reflective piece: Student connectedness and teamwork 01/02/16 (Based on McMillan and Chavis' (1986) principles of community)**

**Question 1:** How would you generally describe your sense of connectedness to the class?

**Question 2:** Do you find it easier to *learn* alone or as part of a team?

a. Why do you think this is?

**Question 3:** Do you find it easier to *complete projects* alone or as part of a team?

b. Why do you think this is?

**Question 4:** How difficult/easy would you describe the projects?

**Question 5:** How did you feel being a member of your team during:

a. The chair project?
b. The Kiosk project?

**Question 6:** What was the most memorable part of working as part of a team?

**Question 7:** What was your best contribution to the team decision process?

**Question 8:** How did working as a part of a team strengthen/weaken your bond with the other team members?

**Question 9:** Did you prefer the randomly assigned team (chair project) or when you chose your own team (kiosk)?

**Question 10**: How would you change the group exercises to promote better teamwork and connectedness?

## N. Student response to reflective survey

**Question 1** how would you generally describe your sense of connectedness to the class?

There are mixed feelings of connectedness to the class as a whole. The students comment about groups or cliques forming in the class. There are also comments suggesting the students would like to feel part of the classroom community.

> *"Very little because not all the students are connected and everybody has their own group"*

> *"I would like to feel I am connected to the class. I feel like I am more connected with the few people I became close with."*

**Question 2:** Do you find it easier to ***learn*** alone or as part of a team? Why do you think this is?

Group member's having different perspectives are perceived by students as both a positive and a negative. The students who preferred to work as part of a group felt they got a better understanding, learned more and produced a better result through the combination of knowledge, views and opinions.

> *"I think it's easier when you're in a group and everyone picks up on different things and understands different ways, being in a group allows for you to discuss things and help each other."*

The students who preferred to work alone mainly cited difference in learning styles.

> *"I find it easier to learn alone, I like to process things by writing stuff down but also to ask questions."*

**Question 3:** Do you find it easier to ***complete*** *projects* alone or as part of a team? Why do you think this is?

The student's rationale for preferring to complete projects on their own was mainly because they didn't want to have to rely on other students because of time management; in that they could set their own schedule when alone.

> *"I think alone because of time management; you don't have to be relying on anyone or be dependent on anyone else. I like working as a team and sharing the work."*

The students who preferred to complete projects as part of a team felt when everyone did actually work as part of a team, generating ideas, sharing the work load and helping each other the task was completed more quickly.

> *"If the entire team contributes well to the project, then of course it's easier."*

**Question 4:** How difficult/easy would you describe the projects?

Most students found the team projects difficult in the beginning when but as the project progressed they found them easier. When asked why they found the projects difficult they said not enough time, hard to manage time, using free time, hard to finish on time. They also said they found it hard to work in groups which made the projects more difficult.

"Not enough time for the projects so we need to use our free time to finish it."

"Hard most times because it's hard to finish on time."

"There's not enough time."

"It's quite difficult because each subject has their own projects so we must manage time."

Reading this particular part of the data really does make me think about how I could use time more effectively and I wonder if it is really their issue or a conflict of the understanding of time between generations. We want to make the team projects difficult and the idea is that the students might bond through the difficulty of the task.

**Question 5:** How did you feel being a member of your team during:

a. the chair project?

For the most part the students seemed to enjoy the chair project. There seemed to be a good sense of equal participation, satisfaction with the finished product and student acceptance of each other.

> *"I felt like I worked well with the team and I was just as equally important as everyone else."*

One of the Asian students made a comment that she was glad to have the opportunity to work with other members of the class.

> *"I think it was very good experience, because I am Asian, not many time to talk with them. But this project I can communicate with others Europe classmates."*

b. the Kiosk project?

Again for the most part the students enjoyed the kiosk project. Four out of eleven students said they enjoyed the project more, that they got on better. During this project they chose their own teams.

> *"I really like this group because they're very nice and I can choose my group, we worked together we combine our ideas into one."*

One student didn't feel the benefit of working with her friends as they had too much fun and struggled to complete the task.

> *"We picked our team so I thought it would be easy, but working with your friends, you play so much and you run out of time."*

**Question 6:** What was the most memorable part of working as part of a team?

Most students said the most memorable part of the project was successfully bringing the project to completion, the finished product or the final presentation.

> *"Working together to create a final piece… The result was the most memorable part."*

Many said getting to know each other, listening and sharing ideas and commitment were the most memorable aspects of the project; that they got on well with each other.

> *"I think that the fact that the work was enjoyable because we all got on together"*

**Question 7:** What was your best contribution to the team decision process?

The rest of the comments were varied the sense is that the students seemed to identify what it was they did or how they contributed, it was interesting to me that they identified skills I wouldn't have expected. Ideas, problem solving; surprisingly only three students said design, presentation and resources, planning, decisions, photographer and leader.

**Question 8:** How did working as a part of a team strengthen/weaken your bond with the other team members?

For the most part the students felt that working as part of a team strengthened the bonds with their other class members. As to why they felt this there were various answers such as spending time together, communicating, and listening. So positive communication was the mainly why they felt they bonded.

> *"I think that it strengthened it as we all spent time together and learned to work alongside each other."*

*"Communication with them got better."*

One student felt that they got to know each other better but this did not necessarily strengthen the bond.

*"It not that [it] strengthen[ed] the bond], after we finish our project as a group we just know each other more, but not get closer."*

**Question 9:** Did you prefer the randomly assigned team (chair project) or when you chose your own team (kiosk)?

The students were split as to a preference for the randomly assigned teams or the teams they chose themselves. Some students preferred the randomly assigned teams as they got to work with people they wouldn't normally work with. Some students felt it was better not to work with their friends as they had too much fun and got very little work done, some students felt more comfortable working with people they knew. Some students felt it didn't really matter.

*"Randomly assigned team because we are able to communicate with other people other than your friends."*

*"I felt more comfortable and confident [when we choose the teams]."*

**Question 10**: How would you change the group exercises to promote better teamwork and connectedness?

There were various suggestions as to how the group exercises could be better designed to support connectedness. One student felt the design of the project didn't matter it was down to the people involved in the project.

*"It's the people not the project."*

There was a comment about being *"…a good listener",* there was also a comment about good *"…communication".*

*"No team leader"* was also a suggestion *"as they may feel they are taking over every job"*.

*"More time to brainstorm"* and *more "time working as teams."*

*"Maybe more work as a class as the teams may have the same questions. And then go off into our groups."*

This student suggested perhaps the students should work in teams while developing an understanding of the project and then split to develop it individually.

## O. Student Questionnaire 10/02/16

**Questionnaire: Student opinion on the effect of a 'time constraint' as classroom strategy to promote connectedness 10/02/16**

**Question 1:** Do you feel like you connect well to other students during the 10 min team session? Why?

**Question 2:** How do you think you learn during this 10 min team session?

**Question 3:** How do you think a time constraint helps you connect to other team members?

**Question 4:** How do you think a time constraint helps you connect to the exercise of completing the task?

**Question 5:** How do you think changing the individuals on the team each time you interact as a team helps develop a sense of classroom community?

**Question 6:** What do you consider to be the relationship between learning and connectedness?

**Question 7:** How do you feel when told your capacity to interact with other students in the class is a learning outcome for this course?

**Question 8:** How you think this course teaches you how to interact with other students?

**Question 9:** How do you think the ability to interact with other students could be taught better during this course?

## P. Student Questionnaire 17/02/16

**Questionnaire: 17/02/16**

**Question 1:** Did you feel like you connected well to other students as you were looking for the information for the final project? Why?

**Question 2:** How and what do you think you learned during today's 25 min team session?

**Question 3:** How do you think the 25 min time constraint helps you connect to other team members?

**Question 4:** Did you feel like you had a common purpose while looking for the information on the final studio brief?

How do you think having a common purpose helps you to connect with other class members?

**Question 5:** Do you feel you have a better understanding of what is required for this project than for other first year projects? Why do you think this is?

**Question 6:** Do you feel you connected better to each other during this week's 25 min session than last week's 25 min session?

Why do you think this is?

**Question 7:** Do you think using a time constraint during team projects makes you connect to other students? Why?

**Question 8:** Do you feel that you can engage with other students in the class to help you solve problems related to the final project?

## Q. Student Questionnaire 24/02/16

**Questionnaire: 24/02/16**

**Question 1:** Did you feel like you connected well to other students as you were looking for the information for the final project? Why?

**Question 2:** Do you feel you connected better to each other during this week's 25 min session than last week's 25 min session?

Why do you think this is?

**Question 3:** How do you think the 25 min time constraint helps you connect to other team members?

**Question 4:** Do you think using a time constraint during team projects makes you connect to other students? Why?

**Question 5:** Do you feel you have a better understanding of what is required for this project than for other first year projects? Why do you think this is?

**Question 6:** How and what do you think you learned during today's 25 min team session?

**Question 7:** Did you feel like you had a common purpose while looking for the information on the final studio brief?

How do you think having a common purpose helps you to connect with other class members?

**Question 8:** Do you feel that you can engage with other students in the class to help you solve problems related to the final project?

## R. Limitations of the methodology

The use of AR for this research specific to the first year design classroom context may not be applicable to generalisation.

The Small scale of this research project may not effect change other than in the classroom setting and may have no organisational impact.

AR is perhaps more complex than other more straight-forward methods of research with both research and action to contend with.

Difficulty in shoehorning the research into the structure of a conventional research project.

## S. Reflective Journal studio team projects

**Reflective Journal studio team projects**

My attention to student connectedness in the classroom is sharpening and I'm noticing more possible influences.

**Movement and energy**

The notion of energy related to productivity seems obvious but I saw it, it was expressed in the space the student takes up, their range of movement, speed and amount of movement. This also affects how they engage with other students.

*"Lethargic students don't engage well."* (Reflective Journal 07/12/15)

**Space and classroom layout**

The students worked physically closer to each other. The traditional way of using the classroom disintegrated and they rearranged the interior space according to their needs.

*"Students work physically closer to each other and the traditional classroom layout breaks down." (Reflective Journal 23/11/15)*

**Social media**

The student groups immediately connected through social media to enable communication during the project, this happened automatically with no prompting. The students in the class who didn't have mobile phones were disadvantaged during these projects.

*"It became apparent students had set up group chat through social media to connect to each other."* (Reflective Journal 18/11/15)

**Conflict, disconnection and competition.**

There was conflict over division of labour, not being heard or a dominant voice in the group who is deciding everything. Another flash point was over different commitment levels. Some students have life space commitments so they can't give as much time to the projects as others, this is initially perceived within the groups as not being committed rather then not being able to commit. As the projects developed the students became more aware of the restrictions others had, whether they were time restrictions, outside work commitments or illness. The students became more understanding of each other's difficulties as the projects progressed.

During the first critique one team member publically expressed his dissatisfaction with another group member who he felt took over the project, he said *"It was like it was her project".* He chose to air his grievances during the critique and not with her during the project.

The accused student worked very hard to complete the project and was focused on *"getting it done"*

They are both strong students, eager to learn and hardworking, perhaps both more individualistic and ambitious than collaborative in nature. They were both more concerned with their needs than the needs of the group.

**Personal responsibility**

One student who is passionate about her studies, a little older and already has a degree, had issues with a younger student who is more laid back about his studies and is more concerned with being socially active in the class.

**Students choose their own teams**

Through a democratic class process the students decide they will choose their own teams for the next project. I point out to the class that the students not present would be late becoming part of a team. The general consensus after some deliberation is *"that's their problem"* (Reflective Journal 02/12/2015) and the students unanimously decide to choose their own teams.

There was less conflict but this may have been because they chose who to work with and so accepted any difficulty that arose as they were now responsible for their choice.

*“some teams are not gelling as well as they thought they would but are getting on with it.”* (Reflective Journal 07/12/15)

At the end of this project the students grade each other for their team work efforts. The students mostly gave each other full marks; on reflection this may be because they knew if they operated as a collective they would all get higher grades which perhaps is an indication they should get full marks for team work.

### Time

Coming up to the end of the kiosk project studio tutor G says he is worried the students won’t be able to complete the projects on time.  I said they always do it at the last minute anyway.

*“The students do most of the work in the last half an hour of the class.”* (Reflective Journal 14/12/15)